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ROENTGEN THERAPY OF BURSITIS*

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and
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Richmond, Virginia

Acute bursitis, also termed peritendinitis calcarea and periarthritis, is an extremely painful and disabling condition, which may affect almost any joint area in the body. The shoulder is, by far, the most frequently involved, but the hip, knee, elbow, wrist, and ankle may also be affected. The subacute and chronic forms vary in the severity of symptoms and amount of disability.

CLINICAL FEATURES

In the acute stage of bursitis of the shoulder, the appearance of the patient is almost as characteristic as that in Parkinson's syndrome. An observant receptionist frequently can make the correct diagnosis.

The pain is very severe, especially at night, when rest and sleep are often impossible. The patient carries the affected arm carefully, walking slowly to prevent the slightest motion or jarring. There is tenderness over the entire shoulder, particularly over the greater tuberosity of the humerus and just below the acromion process. Rotation and abduction are limited and extremely painful. The patient is unable to place his hand on his head, or to reach around to his hip.

In the subacute and chronic cases, the diagnosis is more difficult. Other conditions, such as cervical neuritis or arthritis, heart disease, primary or metastatic malignancy, and acute osteomyelitis must be considered and excluded.

ETIOLOGY

The cause of bursitis is not clear. Codman believed it to be due to destruction and degeneration of the tendons from ordinary use as well as repeated minor strains and injuries. It is generally agreed that most of the calcareous deposits occur in the substance of the supraspinatus tendon, and less frequently in the subscapular, teres minor and infraspinatus tendons.

PATHOLOGY

Howorth studied 23 cases at operation and observed the bursal walls to be thickened and opaque, edematous and vascular. Calcareous deposits were identified in the floor of the bursa as a white or yellowish area. Incision of such an area revealed one of several types of deposits; a milk-like fluid under pressure, a creamy or cheesy material, or a dry, granular substance. These deposits were found in the tendon, the fibers of which were softened and stringy.

Histologic study of sections of the tendons revealed degenerative changes associated with amorphous or granular calcium salt deposits.

ROENTGEN FINDINGS

After a careful history and examination, roentgenograms are made in the antero-posterior projection with the humerus in internal and in external rotation. Stereoscopic films may be helpful. Multiple views are essential, since a single view may fail to show the calcification.

On roentgen examination, calcifications are found frequently in the area of the tendon cuff of the shoulder. In the acute stage, the calcareous material usually gives a homogeneous and putty-like appearance. The chronic deposit is granular and is seen as a denser, more irregular, fragmented shadow. The typical roentgenogram shows an amorphous calcification in the angle between the head of the humerus, the greater tuberosity and the

*Read at the annual meeting of the Medical Society of Virginia in Roanoke, October 13-15, 1947.

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acromion process. Calcification in the supraspinatus tendon is just above the tuberosities. That in the infraspinatus and teres minor is lateral to the tuberosities, while that in the subscapularis is medial to the head of the humerus.

Calcification may occur in the soft tissue of presumably normal persons who cannot recall any symptoms referable to that joint. Bosworth found opaque deposits in the region of the shoulder in 2.7 per cent of 6,061 normal persons. Codman and Akerson, on autopsy examination of aged persons, observed that 39 per cent showed evidence of having had rupture or definite degenerative disease of the supraspinatus tendon.

ANALYSIS OF 200 CASES

Of the 200 cases of subdeltoid bursitis, 44.5 per cent were men, and 55.5 per cent were women.

In the men, the right shoulder was affected in 62.9 per cent and the left shoulder in 37.1 per cent.

In the women, the right shoulder was affected in 49.5 per cent, and the left shoulder in 50.5 per cent.

The patients were in middle or late adult life. The youngest patient treated was 22 years old, the oldest 76.

Most of the people treated had sedentary occupations or were housewives. Fifteen physicians were included in this series. Few colored patients and only rarely a laborer or heavily muscled man were seen.

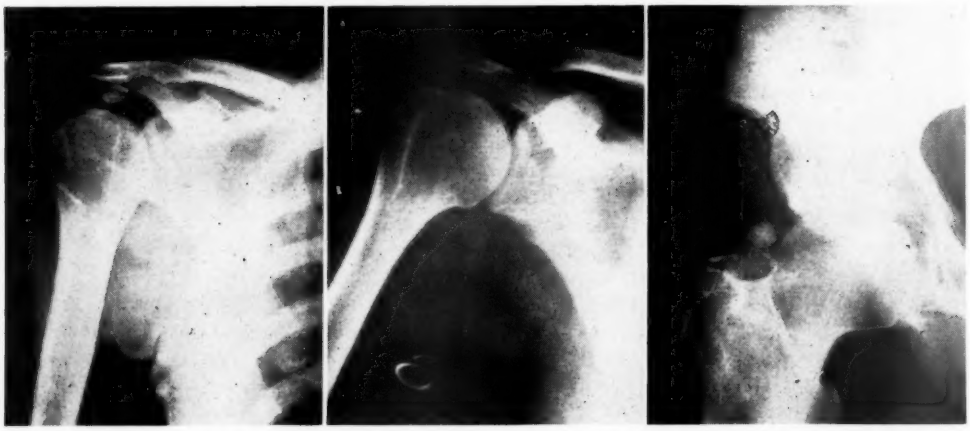
TREATMENT

Various types of treatment have been used. Open operation and excision of the deposit often give complete relief. Injection with novocaine, through-and-through irrigation with saline solution, needling, physical therapy and diathermy have been employed. Cold packs have been found to be effective in giving temporary relief of pain. Heat usually accentuates the pain and should not be used.

Roentgen therapy has been established as a recognized form of treatment by numerous reports in the literature. The roentgen rays have a definite analgesic effect. The mechanism is not understood, but probably depends on a direct physico-chemical effect of the rays on the nerve conduction or pain endings.

Three hundred and sixty-one cases of bursitis have been treated by roentgen therapy in our office during the past six years. Of these, 200 involving the shoulder were treated by an uniform dosage technique and are presented. Seven involving the hip, four, the elbow and one, the wrist, were also seen. Nine shoulder cases were bilateral. Those with symptoms of less than two weeks' duration were considered acute. Those with pain and disability lasting from two weeks to two months were termed subacute, while those of longer duration were termed chronic.

In our present technique, the affected area is given 200 roentgens a day on three or four successive days, divided between anterior and posterior



Case 1.-a. Extensive calcareous deposit in the supraspinatus tendon. Acute symptoms were completely relieved one week after roentgen therapy.

b. Re-examination two months later shows disappearance of the calcification.

c. Calcification in the soft tissues adjacent to the greater trochanter of the femur. Symptoms were relieved by roentgen therapy, but the calcium deposit persisted.

portals. The factors used are: 120 kilovolts, 10 milliamperes, 25 centimeters target skin distance, with filtration of ¼ millimeter of copper and ½ millimeter of aluminum. If the response is slow, an additional portal over the posterior cervical spine is treated once with 250 roentgens.

In this series we observed relief of symptoms in 89 per cent of the acute and in 75 per cent of the subacute cases. We were unable to arrive at a definite evaluation of the chronic group. While a few of the chronic type were benefited, the response was disappointing, and we feel that the chronic cases are best treated by surgery. However, a short course of irradiation may be tried before operation is considered.

Of the acute cases that showed good response, 22 per cent were relieved of the acute pain within 24 hours, and another 28 per cent within 48 hours. That is, 50 per cent of these patients were relieved within 48 hours after the first treatment. The best response to roentgen therapy occurred in the acute cases showing calcification.

Young reported a series of 87 cases of bursitis of the shoulder treated by roentgen therapy at Temple University Hospital, and observed complete relief of symptoms in 87 per cent of acute cases, in 82 per cent of the subacute, and in 33 per cent of the chronic cases.

Infrequently the patient will have an exaggeration of the pain after the first treatment, and he should be warned of this possibility. This can be considered a favorable rather than an unfavorable sign, since the pain usually decreases sharply thereafter. Active motion of the part is advised to the limit of tolerance. With extremely severe pain, a sling support can be used for several days.

Patients receiving roentgen therapy are cautioned against the use of local heat, irritant plasters or salves, as well as against ultraviolet lamp or sunlight exposure.

In the acute cases, the calcification may disappear in from four days to two weeks. The dense, discrete areas of calcification of chronic bursitis usually showed no change, although the symptoms were sometimes relieved.

SUMMARY AND CONCLUSIONS

1. The response of acute bursitis to roentgen therapy is often dramatic. A series of 200 cases involving the shoulder showed relief of symptoms in 89 per cent of the acute phase, and in 75 per cent of the subacute cases. Chronic bursitis showed only fair response to roentgen therapy, and is usually best treated by surgical methods, although a short course of irradiation may be tried.

2. Roentgen therapy is recommended as a rapid, safe and reliable method of treatment in the acute and subacute phases of bursitis.

3. If patients with acute bursitis could have prompt and adequate roentgen irradiation, it is probable that few would reach the chronic stage.

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THE IMPORTANCE OF HEMATURIA*

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It is indeed a pleasure to be here and I wish to thank you all for the opportunity of discussing with you the subject of *"Blood in the Urine."*

Blood in the urine is the single, most important urinary symptom, and yet, as urologists, we are convinced that this is not common knowledge, nor are we convinced that the medical profession as a whole always considers the importance of blood in the urine.

Blood in the urine usually means some serious condition or disease (62% of 300 cases of surgical disease of the kidney alone), and should be investigated promptly. It is rarely constant, but usually intermittent in character. Months or years may intervene between attacks.

May I repeat, blood in the urine is a grave signal in the vast majority of cases. Search for its cause!

A simple and convenient classification of the causes of blood in the urine is division into *general* and *local* causes. Tonight I shall limit my remarks primarily to local causes and mention only briefly general causes.

General causes or systemic causes are mainly extrarenal and comprise less than 5 per cent of all cases of hematuria. This group of causes includes, among many, the blood dyscrasias (sickle cell anemia, polycythemia, hemophilia, leukemia, etc.), infections (infectious fevers such as malaria and typhoid fever and local infections adjacent to the urinary tract such as pelvic abscess, appendicitis and perinephritis), medicinal causes (e.g., sulfonamides) and miscellaneous (endometriosis, varices, etc.). By and large, at present little can be done for these people. Fortunately, the group is small.

Local causes are urogenital causes and comprise at least 95 per cent of the causes of hematuria. In the majority of these something can be done for the patient provided diagnosis is made early.

Considering the *kidney* first, the five most frequent and important causes of hematuria are (1) stone, (2) cancer, (3) tuberculosis, (4) infection, and (5) glomerulonephritis.

*Presented at the Staff Meeting of the Jefferson Hospital, Roanoke, Virginia, May 24, 1948.

In the *ureter,* stone and tumor lead the list.

In the *bladder,* tumors and stones again lead. A close third is acute cystitis in the female with bleeding lasting only 24 hours. Bleeding from the bladder secondary to trauma appears obvious but should always be investigated.

Bleeding from the *prostate* occurs more commonly with benign prostatic enlargement than with cancer of the prostate.

Important causes of bleeding from the *urethra* are rare, the most important being cancer. More frequent, but less important causes, are posterior urethral infections, strictures and traumatic conditions.

So-called "essential hematuria" is not an entity and today is often recognized as being caused by nephritis, varices of renal papillae and more often by extrarenal causes. Occurring most often between the ages of 40 and 50 years, at best, these cases comprise but a small group.

Considering the urogenital tract as a whole, the five most important causes of blood in the urine are (1) stone, (2) tumor, (3) tuberculosis, (4) infection, and (5) glomerulonephritis. At present, excluding glomerulonephritis, something can be done for all these conditions, and, by and large, the earlier these conditions are recognized, the greater the chance of cure.

In the remaining time allotted me, I would like to run through a few cases illustrating these common causes of blood in the urine which demonstrate that blood in the urine is *always* an important sign, that cessation of bleeding is no indication of cure, and that a search for its cause is always indicated.

CASE 1, a 32-year old colored male, entered the Johns Hopkins Hospital in February of this year with the chief complaint of blood in the urine of one week's duration. Inquiry revealed that in January of 1944—four years before—while working in a munitions plant, he suffered a severe blow to the right loin. This was followed by gross hematuria lasting 2 days. Unfortunately, no pyelograms were made at that time. On admission here an intra-

venous pyelogram revealed good left renal function, but the right kidney did not visualize. At cystoscopy blood could be seen coming from the right ureteral orifice and a retrograde pyelogram demonstrated a right hypernephroma. A nephrectomy was done. We are certain that the previous injury did not initiate the cancer and suspicious that the cancer was present at the time of the injury. A thorough examination at the time of injury would have probably told the story.

CASE 2, a 47-year old white male, was first seen at the Brady Urological Institute in May, 1925, with the chief complaint of blood in the urine. On cystoscopy blood was seen spurting from the right ureteral orifice. A right retrograde pyelogram was read as normal and a diagnosis made of hematuria, etiology undetermined. The bleeding stopped for over a year and in November, 1926, recurred. Cystoscopy again showed blood coming from the right ureteral orifice. A right (second) retrograde pyelogram was made and again read as normal—although comparison with previous films showed considerable change. Unfortunately, the patient was lost track of until almost 4 years later when he again returned complaining of blood in his urine (January, 1930). On admission a right retrograde pyelogram was typical of an hypernephroma and a right nephrectomy was done. This case illustrates the need of repeated examinations at frequent intervals in cases of unexplained hematuria.

CASE 3, a 46-year old white male, was first seen by me at the University of Chicago Clinics in October, of 1945, complaining of blood in the urine intermittently for 3 years. He stated that in 1943 and again in 1944 tumors of his urinary bladder had been removed elsewhere with an electric cutting instrument introduced through the urethra. Cystoscopy was done, and in the region of and obscuring the right ureteral orifice was a 3-4 cm. papillary tumor. The right ureter could not be catheterized and an intravenous pyelogram revealed non-visualization of the right kidney. At operation the right kidney and ureter were removed en masse.

Inspection and section revealed a papillary carcinoma of the renal pelvis with extensive ureteral implants particularly in the lower ⅓ of the ureter. Undoubtedly, the "bladder tumors" previously fulgurated were implants from the renal tumor. Had a thorough search been made earlier, delay in removing the primary tumor would not have been as great.

CASE 4, a 46-year old white male, was seen first in January, of 1931, complaining of pain in right loin and gross hematuria. Studies at that time demonstrated a right hydronephrosis, thought to be secondary to uretero-pelvic obstruction and a right nephrectomy was done. Intermittent gross hematuria persisted and in December of 1931—11 months later—a right ureteral tumor was demonstrated and a ureterectomy done. Hematuria persisted and in June, 1932, a suprapubic diverticulectomy was done. Inspection of the interior of the diverticulum revealed a papillary tumor. This man, now 63 years of age, is living and well. Continued search for the cause of blood in the urine paid nice dividends in this case!

Time does not permit a discussion of that most important subject—bladder tumors; however, a few remarks are in order. Hematuria—usually painless—is the cardinal symptom of tumors of the bladder. Usually the tumor bleeds briefly. The patient takes a "sure" cure. The bleeding stops. It is agreed to wait a while to see what will happen next. A year goes by before any decision is reached—a year in which the tumor is growing, infiltrating the bladder musculature and becoming increasingly difficult to conquer.

"It is scarcely believable that this is the case, yet the Carcinoma Registry shows that out of 508 cases of bladder tumor with gross hematuria as the initial complaint, only one-half were diagnosed in the first year, almost 20 per cent had to wait three years for diagnosis, and 26 cases (about 5 per cent) actually were not diagnosed for seven years or more." (Ed. L. Keyes).

Recently, I attempted to destroy a carcinoma of the urinary bladder in a physician, age 55, who had had 3 bouts of gross painless hematuria in 3 years. This physician—well known in the Public Health Service—had waited to see what would happen. A colleague had suggested—at the time of the first attack—that the physician probably ought to see someone.

Lastly, allow me to present a case of urethral cancer.

CASE 5 was a 65-year old white male who entered the Johns Hopkins Hospital in September,

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1941, complaining of intermittent hematuria of 10 months' duration. Inquiry revealed that he had been receiving prostatic massages every two weeks for this 10-month period. Urethroscopy and urethrograms revealed a tumor of the bulbous urethra. This was excised by block resection of the urethra with anastomosis of the proximal and distal urethral stumps. Last report, July, 1947, had it that this man was alive and well and without recurrence of his tumor—a squamous cell carcinoma of the urethra.

In conclusion, forgive me for the brevity of this presentation, but let me plead for the importance of blood in the urine and for vigilance of search for its cause!

Physicians' Incomes.

Physicians' incomes are highest on the Pacific Coast, lowest in the Middle East and New England, according to a new analysis of the incomes of doctors in private practice, made public by William Alan Richardson, editor of *Medical Economics*, national business magazine for physicians.

The area where the average income of M.D.'s is lowest ($9,347 net a year) is reported to be the Middle East, comprising the states of New York, New Jersey, Pennsylvania, and Maryland. Close second is New England, with a net average of $9,445. New York is lowest for the entire country at $8,709 net, vying with the Massachusetts low net of $8,806. Virginia has a net average income of $11,858.

The Far West average net income for physicians is $14,227. California hits the very top with a net average of $14,293. Texas is second highest at $14,098 net average. Florida also reports high incomes for doctors. The net average income there is $13,913.

In communities under 5,000 the average net income was $9,436; from 5,000 to 50,000, $11,619; from 50,000 to 500,000, $13,047; from 500,000 to 1,000,000, $13,137; and over a million, $9,453.

Mr. Richardson called attention to a previous survey made by *Medical Economics* which revealed that fees paid by patients to physicians in 1947 averaged $2.28 at the doctor's office, $3.34 for house calls during the day, and $4.89 for house calls at night.

On the average, doctors have hiked their office call fees 37 per cent during the last ten years. In that same period, the general cost of living has soared 67 per cent.

New Books.

Among recent acquisitions to the Library of the Medical College of Virginia are the following which may be had by Virginia doctors under usual library rules:

Bamford—Poisons, their isolation and identification. 2d. ed.

Bergler—The battle of the conscience.

Bethe—Elementary nuclear theory.

Bluemel—War, politics and insanity.

Brams—Treatment of heart disease.

Elledge—The rehabilitation of the patient; social case work in medicine.

Ficarro—Essays on historical medicine.

Goar—Handbook of ophthalmology.

Hamilton and Simpson—Calculation of analytical chemistry.

Hart—Psychology of insanity. 4th ed.

Kingsley—The nature and condition of learning.

Lilge—The abuse of learning.

Lillie—Histopathologic technic.

Long—A, B, C's of sulfonamide and antibiotic therapy.

Miller—You and your doctor.

Myers and McKinlay—The chest and the heart.

Sherrington—The integrative action of the nervous system.

Sutherland—Principles of criminology. 4th ed.

Thoma—Oral surgery. 2 vol.

Walter—Aseptic treatment of wounds.

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THE PSYCHOSOMATIC EFFECTS OF CHRONIC INVALIDISM*

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INTRODUCTION

The interest of the medical profession has been centered by many writers on the origin of diseases from psychic causes, but little emphasis has been placed on the effects on the personality of diseased organs or the presence of illness whether psychogenic or somatogenic. The problem of curing the chronic invalid is the job of the practitioner, because it is to him that the patient returns for care after the specialist has failed. It is up to the family doctor to care for the chronic invalid when his disease can't be cured or at least when his recovery has been delayed beyond the usual expectation in the situation presented by his case. The general practitioner, therefore, should have a great interest in the effects of chronic illness on the personality, especially when the psychic disturbances may be a major cause for the continuation of the somatic dysfunction.

In 1946 a psychosomatic medicine monograph entitled "Chronic Disease and Psychological Invalidism", a psychosomatic study by Jurgen Ruesch and collaborators, was published with the sponsorship of the American Society for Research in Psychosomatic Problems. This monograph described in detail the study from the psychological standpoint of 187 patients afflicted with chronic diseases. They defined a chronic disease as a chronic condition from which human beings can be reasonably expected to improve. Diseases which lead inevitably to death were excluded. The criteria for selection were:

1. Every case had to have physical symptoms which had been treated by a physician as a physical disease.
2. The symptom had to persist over a period which exceeded the time commonly needed for recovery, and the treating physician had to have indicated his inability to improve the patient further with ordinary methods of treatment.
3. Excluded were: all psychoneuroses and psychoses without physical symptoms and psychoneuroses never treated for physical symptoms.

*Read before the Medical Society of Virginia at its Annual Meeting in Roanoke, October 13-15, 1947.

The results showed that the abnormal findings fell in the region of religious, marital, sex, pelvic, medical and childhood histories. Maladjustment was expressed in terms of disease, sexual and marital difficulties. The childhood history was characterized by the absence of grossly unfavorable economic or social circumstances, but more subtle difficulties related to inter-personal relationships were definitely present. These workers, Ruesch and collaborators, by the use of a short time psychotherapy which included both individual and group therapy were able to bring about recovery in these persons with chronic disease. Rehabilitation through psychotherapy in persons with chronic diseases seemed to these, apparently very careful workers, to be distinctly worthwhile.

If this is so, it would seem also worthwhile to spend a little time considering what happens to the personality in chronic disease and then how this knowledge could be applied. The understanding of this personality reaction calls for an analysis of the relationship of psyche to soma which would permit insight into the psychosomatic effects of chronic disease.

The development of the body image is the first consideration. Whenever we are interested in anything, that thing is represented by a group of ideas in the mind. If we are interested in an experiment, that interest does not leave the mind but stays there grouped around the ideas which form the image of that experiment. If we love a girl, that love does not leave the mind but stays there appended to the mental duplicate of the one we love. Also, if we hate, we often think that this hate is projected to injure our enemy, while all the time the object to which the hate is attached resides within our own psyche to exert its baneful influence on us alone. In the same manner the different parts of our body have psychic representation. An image is formed of the heart, the lungs, the skin and the bones just as objects outside of ourselves are represented. This representation, however, differs from that of outside objects, since the parts of our bodies differ in imagery according to our racial inheritance, our education, and our emotional coloring. Thus the

brain would mean one thing to a neurosurgeon and another thing to a racketeer. The heart to a lover differs from the heart we see at the autopsy table, yet the emotional component attached to the image of the heart in the psyche must include both that of the lover and of the pathologist since tradition as well as universal practice relate the tender emotions to the concept heart.

CHART I

Image of Object in psyche →	Has attached meaning according to →	1. Racial tradition 2. Experience—conscious, unconscious 3. present situation
Image of Organ →	Has attached meaning according to →	1. Tradition of Race 2. Experience—conscious, unconscious 3. Present situation

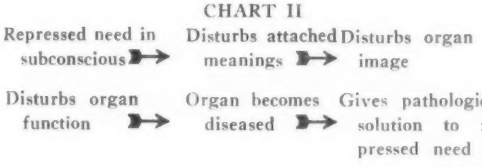
The everyday speech of people indicates the structure of the body image. The representation of our organs in our psyche is far different from actual body structure and has a connotation to the individual which measures his stage of individual development, yet contains the many phantasies and misinterpretations of the past which have attached themselves to the organ image. These phantasies exist more or less buried in the borderline of consciousness. The so-called organ language gives us the clue to the attached meaning of many organ images. If we put our "heart" in a task, it is different than if we put our "belly" in it. We can't "stomach" a proposition if we "bite off more than we can chew". A man with no "guts" may turn his "back" on the proposal. He may get his "back up" and become "hard headed" about the matter. We have a man with "cold blood" or he may show a "touch of liver". He may have a "jaundiced" eye, or have too much "spleen" to be a comfortable companion. Defecation and urination are used to express disgust, hate and aggression. A person feels it in his "bones" that bad luck is upon him. Things that are right go to the right, wrong things to the left. Things to be ashamed of and hidden are put behind and in the lowest part of the back. Young women who marry old men unable to satisfy them sexually have low back pain. This pain can't be in the anus, which is too dirty to exist, but is placed just above, over the sacrum or sacro-iliac juncture.

Thus we see the heart is a center for tender emotions, the head is the leader and chief. To have a headache is perfectly proper, but to have confusion in this organ is disgraceful. The upper gastro-intestinal tract is the great receiving apparatus. We only take in what we can "swallow". The stomach shows our ability to stand things, while the "guts" designate our courage. Liver, kidneys, spleen, bones, blood, breath, food, urine and feces all have traditional meaning handed down through the ages, a childhood meaning, and a meaning to the adult. All these ideas are attached to the body image formed by the ordinary human being who rarely sees the back of his head, his dorsal, lumbar or sacral regions, who never sees his own organs, and has, unless medically trained, very little idea of where they are or what they look like, much less their true function.

In response to certain needs certain parts of the body are upset. This part that is upset is in close relation to the image of that part that exists in the psyche. As a babe we suckle the breast of the mother, we take in food and love into the gastro-intestinal tract. This pattern is laid down in the body image; then, later, when the man has revolted against the over-protecting mother, he yearns for love, but represses his yearnings. Then the part of the body where love is taken in is disturbed, since the image is closely related to the actual organ. These are the findings in the gastric neurosis that lead on to ulcer, or in the over-active patient striving for independence, jealous of his prerogatives, but all the time longing for the love he spurns. A similar but an opposite reaction occurs when the repressed hostile feelings against a dominant parent are expressed by a colitis with an alternate constipation, when gifts are withheld from the hated mother who formerly begged so for "the little man to make balls in his pottie", and with diarrhea which, in the traditional vernacular of the Anglo-Saxon, expresses the utmost in hostility and aggression. Thus, we see there is a close relationship of the traditional image, the childhood image, the adult image and the actual functioning of the gastro-intestinal tract. The heart, the liver, the lungs, the kidneys, and the head will be upset in the same way, when there is some personality need which, repressed into the subconscious, starts this vicarious chain of reactions which leads to a pathological form of satisfaction. Clinically, these conditions

are known as organ neuroses, but it is well to remember that it is primarily the organ as conceived in the body image that is upset, not the organ as known to the physician. The craving for love of the potential ulcer case involves the gastro-intestinal tract from the mouth to the stomach so that cutting out the ulcer or sectioning the vagus may not cure the anorexia or the globus. Also, it is well to remember that the neurosis represents a satisfaction of the personality need, although a pathological one, so that the removal of the pathology often produces a state of unsatisfaction calling for the use of more pathological mechanisms. Solution of the neurosis then should accompany all surgery on the organ neuroses to prevent subsequent personality disorders more serious in nature.

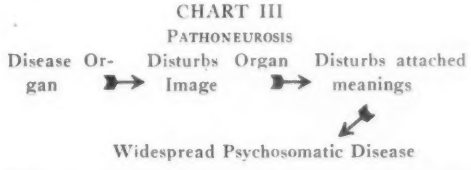
CHART II



Organs, however, do get sick from other than emotional causes. There are such things as heart failure, cirrhosis of the liver, arthritis, asthma, as well as pulmonary tuberculosis. Such diseases of the organs may be acute, when recovery is so rapid that there is little time for much personality change, or they may be slow in healing. Indeed, recovery may be delayed and then, as Ruesch has shown in his study, the personality problem becomes most important, and then some times the only relief is through psychotherapy.

CHART III

PATHONEUROSIS



What is it that happens when an infectious or degenerative disease singles out an organ? First, its function is disturbed so that the patient becomes more aware of its presence. Perhaps it has functioned out of awareness before, but now becomes of great interest as it moves toward the center of the stage. As the organ thus reaches the focus of attention, its image becomes more vivid, as do all its connotations, both traditional and emotional. Soon all the disturbances in the vegetative nervous system, which usually accompany the personality's interpretation of the meaning of the organ image, are in evidence so that there is not only a sick organ, but a disturbance of systems of organs that are caught up in the interpretation of the meaning. Therefore, the tuberculosis or the cirrhosis have far-reaching personality effects similar to that seen in the organ neurosis described above, except that here the diseased organ is the starting point, while in the organ neurosis it is a personality need. Advertisers of drugs are well aware of this relationship. For example, Carter's Little Liver Pills even drive the clouds away and make life worthwhile again. In 1916 Ferenczi gave the name of pathoneurosis to the total personality response to organic disease.

Case No. I: A man of 49 entered the hospital in November, 1944, complaining of asthma which he had had since he was 17. He had a spastic colon and nervous spells. It was found that he slept with his mother until he was 12. She was very demanding and very energetic. He hardly knew his father until he was 16. It was when he had to leave his mother at 17 that he had his first spell of asthma. At the time of admission to the hospital, he was married and had two boys who were both grown. He had severe attacks of anxiety which he alleviated by carrying a bottle around in his pocket with a nipple on it. In this bottle he carried a weak solution of ethyl alcohol. One or two sips on the bottle relieved his anxiety, and prevented his asthma and his colitis. As this went on there was some danger of his becoming an alcoholic, so he just carried distilled water in his pacifier. Thus this man had a suppressed need for his mother which could be satisfied by the bottle substitute. The need disturbed the respiratory system where he cried for his mother, so to speak, while the colitis expressed his hostility to her domination. The asthmatic reaction was part of the organ neurosis, but as it became chronic, it led on to chronic alcoholism and other psychosomatic disturbances. This last personality reaction should be classified as pathoneurosis and was secondary to the chronic disease which in this case was in the main psychogenic. Thus, we have an example of organ neurosis and pathoneurosis in the same case.

However, as the recovery is delayed, other changes take place in the psychic relationships. Often, as you may remember, when, as a boy, we had our

desires thwarted, we would take out our resentment on an inanimate object. If mother said we could not go to the ball game, we kicked a chair or a door to relieve our hostility. Also, when playing ball, we might run for a fly, stumble over a rock, and then when we had missed the ball, hit at the offending stone. Thus the sick organ begins to accumulate feelings and hostilities which formerly were directed outside the personality, but are now turned in as the interest leaves the object of former love or hate and turns toward the disturbing but more attractive organ image.

Case No. II: Especially in recent years, as women are fighting for place in a man's world, there is a great desire of many women to get rid of their uterus. The womb is the symbol of womanhood, as the penis is of maleness. All the envy and jealousy of the female for the male is often turned against the womb, so women go through many operations until at last they have accomplished castration. E.L.W. illustrates such a situation. This man of 42 has been nervous and depressed for two years. It was then his wife left him. They were married when he was 19. They lived together 22 years, and they have three children—all grown and married. E.L.W.'s wife had three operations on her pelvis. Finally she had her womb removed. She has gone to work and will not allow him to live in the house, so he now lives with his son after turning all his worldly possessions over to her. Her hatred of the feminine role caused sufficient pelvic discomfort for her to make a man out of herself and get rid of her husband. Ruesch, in his report, stated that self destructive tendencies were responsible in 73% of persons studied, for the delayed recovery encountered. The hostility to an organ or to a system may well lead to symptoms which in turn lead to mutilating operations.

As the disease becomes chronic the more the organ image becomes the center of psychic life, while to it are related the desires and hopes of life which are frustrated by the presence of the disease. Also, certain hostilities of life in which we were formerly interested now become engulfed in this new center of interest so that now the hostility is directed toward the disease.

Case No. III: A young man of 34 had a very ambitious mother who forced him to excel in every endeavor. He led his class in high school and in college. In the business world he was highly successful; indeed, he almost had the "Midas touch". Everything he touched was tinged with gold. He developed a dermatitis which he could not overcome. It itched and he scratched until he practically denuded his body. He would peel off great hunks of skin with apparent joy in unrestrained orgies of scratching. The disease represented his first frustration in life and he attacked the frustrating organ (the skin) with fury. Later, as he understood his disease as a revolt against the tyrannical perfectionism instigated in childhood by a perfectionistic mother, he began to accept his disease, was sufficiently relieved by hypnosis, and returned to work. This case illustrates both the frustrating effects of illness and the results of the suppressed hostilities, when directed against an organ which has been imbued with the emotional meaning detached from an external object and now applied to the diseased organ.

We may have hatred for a mother-in-law, but a bad bronchitis with cough diverts our attention from our former object of hate, while the emotion formerly directed toward mother-in-law now encompasses the infected organ.

Still another frequent complication in the psychological setting of chronic disease is the phenomenon of secondary gains. In discussing the organ neurosis above, it was pointed out that the neurosis presented a pathological solution which was some times dangerous to remove unless the underlying conflicts were solved.

Case No. IV: Mrs. E. L. J., a woman of 60, entered the University Hospital on 8/14/47. She had been unable to walk for a year. The patient's husband died approximately four months before she became sick. He was 75 years old and had been crippled for several months. She was very religious and very strict with her four girls and one boy. She ruled them by her illness, as they danced in attendance. One married daughter who stayed out after 11:00 o'clock at night was told that she must mend her ways. The patient was temporarily relieved with hypnosis, but at the time of discharge was not sure she could remain well if her daughters did not behave according to her desires. It was necessary to break up the family to prevent a return of illness. Here the secondary gains from the illness were so great that the patient could not get well.

Here there is a similar but a different use of dis-

ease for personality benefit. The well known example is the patient who feigns illness to prevent discharge from the hospital, or the mother who simulates paralysis to prevent her daughter's escape from the home. There are many secondary gains which may be obvious, but there are many more which are as subtle in their manifestations as they are mysterious to the patient. Secondary gains frequently work beyond the threshold of consciousness to cause delayed recovery from chronic disease, so that it is only with the greatest patience that the doctor can re-educate the invalid in order to wean him from this form of pathological achievement.

In direct relationship to secondary gains there is a final process to be described. There is a tendency in most people when sick to become more dependent. Frequently this goes on to childishness and a desire to be mothered. Men seem to show this trait more than women, but nevertheless it is a reaction which is so widespread that it is practically expected by all that care for the sick. There is a definite relationship of this reaction, namely, the return toward childhood and the withdrawal of interest from the surrounding objects to one's own self or to one's own body image. The more the body becomes a source of interest, the more there is a tendency to regress, that is, use the type of behavior formerly used at an earlier age period. A neurosis is defined as a personality reaction in which an adult attempts to solve a conflict by means of infantile techniques. A psychosis results when the personality is so caught up in self worship that the entire response is infantile or archaic. In other words, the turn backward and inward that accompanies chronic illness is a serious matter and often leads to personality regressions which remain permanent after the disease is cured. Indeed, the resulting state may be more serious than the disease. This is seen in children with long standing orthopedic illnesses, and frequently plays a part in post-partum psychosis.

Case No. V: This man of 41 is now in the hospital because of pain in the lumbar region of his back which travels around his right side and down into the groin. He has had this since 1938. Besides the pain, which he still has, he suffers from inability to concentrate and fears of impotence. He has lost interest in his children and in his work. He feels constantly obsessed by the presence of this pain. Since 1938 he has had numerous cystoscopic and proctoscopic examinations. He had his gall bladder out in 1939. In 1940 he had an exploratory laparotomy on the left. In 1942 the gall bladder region was explored. In 1943 he had a fall following which his coccyx was removed. In 1944 he had a fusion of his dorsal spine for pain in that area. In 1945 he had removal of spicules of bone in the coccyx region for the pain. In 1946 he had a removal of a herniated disc and in April of 1947 a rizotomy was done for the relief of the pain. This man is now showing definite evidence of a psychotic regression. He may have had an organ neurosis to start with, but the constant surgical attack on the involved area has centered his attention into himself so long that now his reactions are fantastic, childish and his obsessions are becoming obvious delusions.

CHART IV

PSYCHIC DISTURBANCES FOLLOWING CHRONIC DISEASE

1. Systems disturbed through attached meaning of organ image (similar to organ neurosis).
2. Frustration of personal desires.
3. Emotion related to outside person or thing attached to disease.
4. Secondary gains.
5. Increase in self-interest causes pathological reversion to childish behavior, neuro-psychosis.

In summary, therefore:

1. A chronic disease may upset the organism as an organ neurosis does when the whole system related to image of the organ is upset. An infection of the lungs may be accompanied by a disturbance of the whole respiratory system. This in turn may solve some primary need of the individual making the disease of value to the personality since it allows a pathological adjustment of a buried conflict.

2. Chronic disease may cause frustration of hopes and desires which in turn causes emotional reactions to the frustrating disease.

3. The emotion which is related to an outside object from which the disease has caused a withdrawal of interest may be attached to the crippling disease.

4. The chronic disease picks up secondary gains as it goes along which makes it of value in the effort of the personality to adjust to life. This process makes cure less desirable from the person's point of view and more difficult from that of the doctor.

5. There is always a tendency of the personality

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to regress toward childhood in the face of illness. This may be a regression in part such as seen in a neurosis, or a total regression such as seen in a psychosis. Both complications may be seen in practically any chronic disease.

We can conclude, therefore, that there are psychic accompaniments of chronic disease which lead on to other somatic disturbances, which cause delayed recovery from the chronic disease. Every chronic disease has these complications to some degree; therefore, their cure is the doctor's job. This cannot be done by the ordinary medical procedures. These patients are too numerous to refer to the specialist, so they must be treated by the man who works in the home. The attack is by means of a planned psychotherapy. This is a definite job which takes time, at least ten to twenty hours, over a two or three month period. The first step is a show of interest in the patient himself more than in the disease. The meanings and purposes of the illness then come to light as the patient gives to the doctor the story of the development of his personality. The doctor interprets this and then guides the patient in the steps that are necessary to remold the life, because nothing is truer than that, if there is only talk and not action and no change in attitudes and behavior, nothing will be accomplished.

The patient will transfer some of the interest from his organs to his doctor and will tend to become dependent on the doctor-patient relationship. This transfer in turn has to be explained away so the patient does not remain crippled by new secondary gain. Frank discussion with a development of insight will bring this about. Thus brief psychotherapy but a planned and well-organized one, bringing understanding and independence to the patient, leads to a cure.

DISCUSSION

DR. WALTER B. MARTIN, Norfolk: The psychomatic medicine is as old as time, although only recently has it developed a literature or become dignified by a special appellation. The pool at Bethesda was a spot sought out by people who came to bathe in its waters and be freed of their diseases. When Naaman came down to Israel because of an untractable skin condition, he was told to bathe seven times in the River Jordan and he came out clean. Psychomatic medicine is not a new thing. The old family physician has practiced psychomatic medicine for years, but he did not use the terminology that we use now.

We all realize that an individual's mental attitude has a profound effect on the function of his organs, and may even lead to the development of physical disease. We further know that physical disease, in turn, reacts upon the mind. We are constantly encountering examples of this in our everyday practice. I doubt very much, however, that many of the situations that produce these conditions are as deeply buried in childhood experiences as Dr. Wilson's paper would suggest. More often there is a much more prosaic explanation. Most of the functional disorders as seen from day to day arise from rather simple causes. There is nothing particularly obscure in the trend toward invalidism in the weak individual who has experienced relief from responsibility that comes with physical illness. Family doctors have observed this for years. Being acquainted with the families in his community intimately, he knows that some are unstable, lazy and irresponsible, and that some are industrious, ambitious and responsible. I believe the issue has been clouded by a too ready acceptance of the idea that we are mastered by influences that go back to childhood. We are encouraged to think that we are not responsible for our own conduct, but that what our parents did to us, how they trained us and influenced us, relieves us of our individual responsibility for developing our own character. I believe that our approach to these patients should be through an effort to help them strengthen their character, and thus become capable of meeting and solving problems with which they are faced.

DR. WILSON, closing the discussion: It is unfortunate that there cannot be other discussors. I enjoyed Dr. Martin's discussion, but he made the mistake of including the personality problems discussed among all other so-called psychosomatic difficulties. These persons are those that have chronic illness, yet do not get well. There was no discussion of the incipient problems or the milder cases, such as he describes. It was felt by the author after considerable study that these cases of chronic disease that didn't get well could be segregated into groups for proper recognition and treatment. It is hoped that this descriptive classification will lead to more successful handling of this very troublesome group of medical problems.

THYROID SURGERY*

JOHN W. DEVINE, M.D., F.A.C.S.
JOHN W. DEVINE, JR., M.D., F.A.C.S.
Lynchburg, Virginia.

We are presenting 255 successive thyroidectomies that we have performed during the past 7 years. There were 2 deaths, both in thyrotoxic patients.

Fig. 1

We were unable to obtain an autopsy in either case, but upon the basis of clinical impressions death was attributed to tracheal collapse in one case and coronary occlusion in the other.

Photograph (figure 1) is that of a patient with a simple colloid goiter, who came in because of the following chief complaint: "Ain't nothing wrong with me, Doc, it's just my boy friend don't like this lump." The "lump" that was removed showed the typical appearance of this type of goiter, the low cuboidal epithelium and the large acini filled with colloid. The next photograph (figure 2) shows the patient three months after operation, at which time she was married—a successful case from all view points.

The diagnosis of nodular goiter is relatively simple; it is made by seeing or feeling one or more nodules. The chief diagnostic problem is determining the presence or absence of thyrotoxicosis, pressure, malignancy, or impending malignancy.

The only treatment is surgical. The question is which cases need treatment. If thyrotoxicosis or pressure is present, surgical intervention is necessary. The problem of determining malignancy or impending malignancy is the difficult question. We feel that single nodules should be removed. Means[1] states that if you find a single nodule in the thyroid, the chances are 2½ to 1 that it is a true neoplasm, whereas, if you feel several nodules, the chances of their being true tumors is only 1 to 4. Hinton and Lord[2] draw an interesting comparison between nodules in the breast and those in the thyroid. They report a 7.6 per cent incidence of thyroid cancer in clinically unsuspected nodular goiters as against a 6.7 per cent incidence of cancer of the breast in clinically benign "lumps" in the breast. They conclude that all nontoxic nodular goiters should be removed surgically because of the relatively high incidence of unsuspected cancer. Malignancy should be suspected if the patient gives a history of a rapid increase in the size of a preexisting nodule or the development of a nodule in a short period of time. In skilled hands, the risk

Fig. 2

*Read at the meeting of the Medical Society of Virginia in Roanoke, October, 1947.

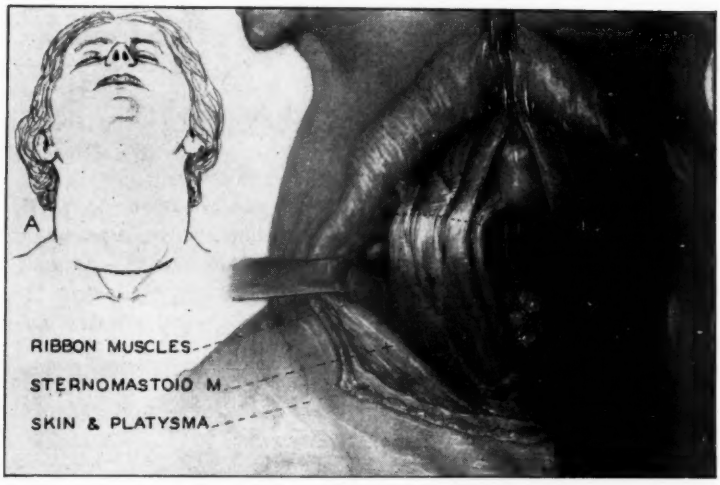

Fig. 3

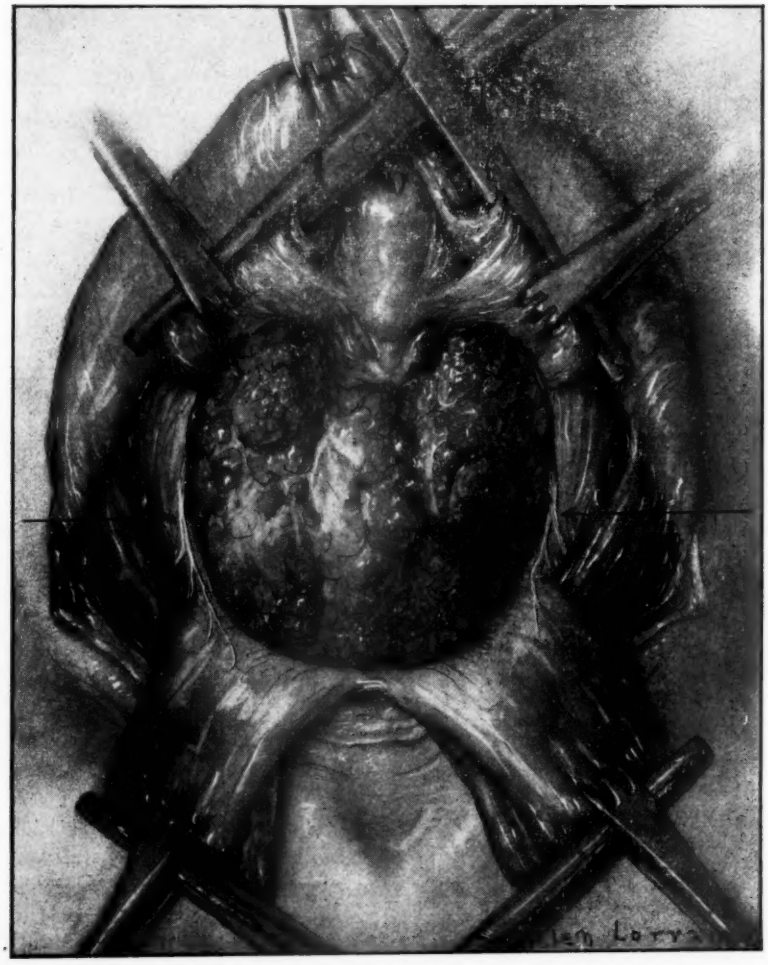

Fig. 4

to life involved in an operation for nontoxic nodular goiter should be close to zero. This should not be confused with the mortality of thyroids as a group, which includes those with thyrotoxicosis. There were no deaths in our series of nontoxic nodular goiters. One patient was a 42 year old white woman, who had a symptomless nodular goiter for 20 years. On admission, she complained of loss of weight and extreme nervousness of 1 year's duration. Her basal metabolic rate was plus forty. This patient made an uneventful recovery following a sub-total thyroidectomy. The next case was a 45 year old white woman who complained of difficulty in swallowing and breathing. Physical examination revealed nodules extending beneath the clavicle, and roentgenographic examination of the chest showed the deviation of the trachea by the substernal extension. Under intratracheal ether anesthesia, this goiter was removed without difficulty.

All the characteristics of primary hyperthyroidism: loss of weight, nervousness, exophthalmos, and the accompanying eye signs were shown by one of our patients, a 23 year old white woman. Her basal metabolic rate was plus fifty on admission. It is essential to have close cooperation between the internist and the surgeon in this type of case. Following iodine preparation, this patient had a subtotal thyroidectomy in one stage. Before the use of thiourea derivatives it was necessary in many of these cases to perform the operation in stages. In 4 of our cases it was necessary to do the operation in four stages. First one pole and then the other pole, then one side of the gland and then the other side of the gland were removed.

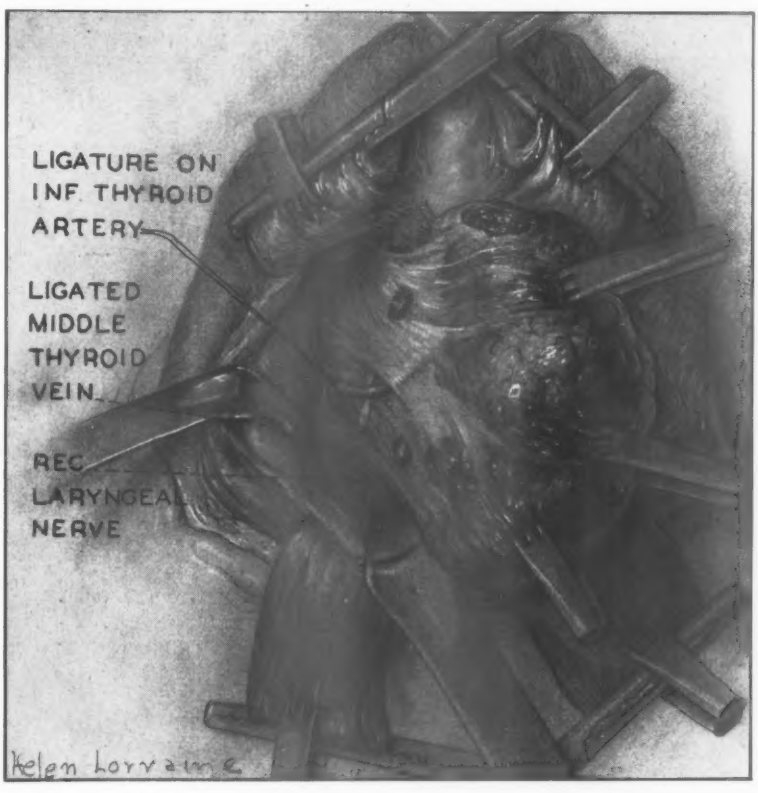

Fig. 5

The following cases will illustrate our experience with thiouracil. The first case was a 55 year old white woman who during the past year had lost 30 pounds of weight. Her pulse rate was 100 to 110.

She was markedly nervous and her basal metabolic rate was plus ninety. The patient was in the hospital for 2 weeks on iodine therapy without response. She was placed on thiouracil, and blood and metabolism studies were made at weekly intervals. After 3 months of this treatment, the patient's metabolism was plus five and she had gained 25 pounds of weight. The patient had an uneventful recovery following a sub-total thyroidectomy. Cases similar to this led us to be very enthusiastic, but cautious, about thiouracil. The next case was a 62 year old woman who was very toxic. In spite of careful observations of her blood and metabolism, she developed agranulocytosis 8 days after the drug had been discontinued and, in spite of vigorous therapy, died. We have now abandoned the use of thiouracil.

Propylthiouracil gives the same therapeutic response, and we have had no toxic effects from this drug which we have now used in approximately 46 cases.

A thyroglossal duct cyst has a characteristic midline tumor which moves on swallowing. If this type cyst is removed, it is necessary to dissect the duct through the hyoid bone, taking a small portion of the hyoid bone on each side to prevent recurrence.

The following figures illustrate the surgical technic that we use in hyperthyroidism. This is a modification of the Lahey[3] technic. A curved transverse incision is made one or two finger breadths above the clavicle (figure 3). The skin flap is dissected to the level of the notch of thyroid cartilage.

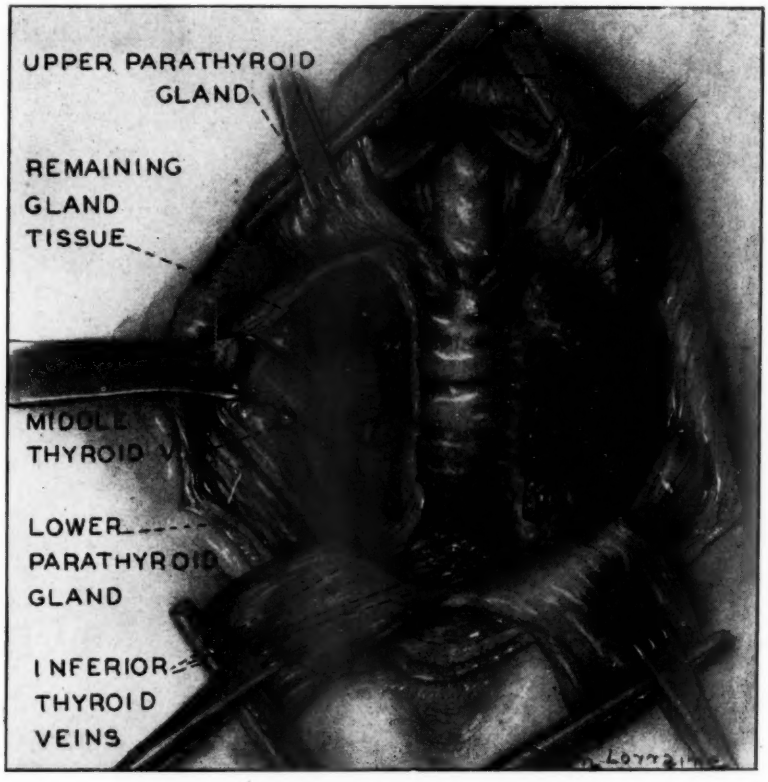

Fig. 6

The anterior edge of the sternocleido mastoid muscle is separated from the underlying pre-thyroid muscles. The sternocleido mastoid muscle is retracted and a high complete division of the ribbon muscles is made between two Kocher clamps. When these clamps are retracted, full exposure of the gland is obtained (figure 4). The middle thyroid vein is identified and ligated; then the gland can be ele-

vated with two tenaculums and rotated medially (figure 5). The dissection in the lateral gutter should be bloodless, as it is very difficult to identify the recurrent laryngeal nerve if the field is stained with blood. The carotid artery is identified and retracted laterally. The inferior thyroid artery is identified and ligated but not severed. The recurrent laryngeal nerve can now be identified as it passes over, under, or between the branches of the inferior thyroid artery. The superior pole can now be safely ligated and severed. The desired amount of gland is marked off with clamps and then removed. The trachea is bared and we are careful to remove the entire pyramidal lobe. Figure 6 shows the operative area after the glandular tissue has been removed. Triple zero chromic cat gut ligatures are used. The ribbon muscles are sutured and the fascia is closed in the midline. Clips are used to close the skin. A rubber tissue drain is brought out through the lateral edges of the wound in some cases. When a drain is used, it is removed in 24 hours. One half of the skin clips are removed on the second post-operative day and the other half on the third day.

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Drug Injection Aids Asthmatics in Surgery.

Intravenous injection of small amounts of the newly developed drug Isuprel provides control of asthma under anesthetics, thus removing one of the surgical hazards for patients suffering from this condition. Laryngospasm and acute bronchospasm suffered by patients while on the operating table sometimes prove fatal.

Doctors Ellin N. Cohen and Frederick Van Bergen report in the Bulletin of the University of Minnesota Hospital and the Minnesota Medical Foundation that Isuprel injections provide "complete relief throughout the surgical and postoperative periods". Initial dosages varied from 0.16 to 0.02 milligrams. Largest total dose was 0.068 milligrams. Rise in pulse rate and blood pressure was minimal in all cases.

Isuprel was introduced this year by Winthrop-Stearns Inc. Laboratory investigations were initiated by the then Frederick Stearns & Co. Division of Sterling Drug Inc., Detroit, and were completed by the Sterling-Winthrop Research Institute in Rensselaer. Dramatic relief in treatment of asthma using Isuprel was first reported in this country by Dr. Maurice S. Segal, of Boston City Hospital.

Peptic Ulcer Symptoms.

Persons who think that they have a peptic ulcer may, instead, have a small pouch near the stomach which produces pain and a feeling of fullness after meals, report three physicians of Beverly Hills, Calif.

Writing in the October 9 issue of *The Journal of the American Medical Association*, James G. Conti, Jr., Thomas P. Foltz, and G. Arnold Stevens, associate clinical professor of surgery at the School of Medicine of the University of California, Los Angeles, say that in three patients the pouches caused distress after eating. All three patients were cured when the trouble was corrected by surgery, according to the article.

Many persons who have the illness believe that it is due to peptic ulcers. Some sufferers have been labeled as psychoneurotic despite a long history of dyspepsia, the article indicates.

The pouches do not produce symptoms in the majority of persons who have them, the physicians point out.

XUM

THE DIAGNOSIS AND TREATMENT OF NEUROSYPHILIS WITH NEGATIVE BLOOD AND SPINAL FLUID WASSERMANNS*

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The purpose of this presentation is to point out the advantage of evaluating all data before making or rejecting the diagnosis of neurosyphilis. The presence or absence of one finding neither confirms nor denies the diagnosis of central nervous system syphilis. This includes the serology.

The diagnosis of neurosyphilis is made on the complete picture presented; namely, the complaint, history, examination, and laboratory study of blood and spinal fluid. Dattner[1] states, 'One should never forget that alterations in the spinal fluid findings only reflect a process; they are not the process itself. A positive spinal fluid, therefore, does not mean that there is something wrong with the spinal fluid, but rather that there is a pathologic process present that mirrors itself in the abnormal spinal fluid reactions. . . . It is understandable that pathologic processes occurring in the deeper structures of the central nervous system and not reaching the surfaces—as, for example, some vascular occlusions or deep-seated gummas—may not manifest themselves in spinal fluid changes."

The first change in spinal fluid is an increase in cell count, then increase in globulin and protein, followed by abnormal gold curve and positive Wassermann. When the spirochetes first invade the parenchyma, the total protein continues to increase until finally the gold curve and Wassermann reactions are positive in the typical case. As time goes on, even without treatment, the cell count and total protein often return to normal and the gold curve and Wassermann remain positive. However, in some cases, the Wassermann may become negative in what has been termed "burned out cases"—of tabes especially. Furthermore, our case of EAN shows that a few shots many years ago may have been a factor in his negative serology concomitant with a slow progress of taboparesis. That this can occur is shown in a case reported by Woods[2] in the *J.A.M.A.*—"The autopsy revealed old syphilitic meningitis, syphilitic endarteritis of the small blood vessels in the whole central nervous system. However, a spinal fluid study one year before death was negative. But there was clinical history of syphilis, and antiluetic treatment in several clinics." The concept that a negative spinal fluid Wassermann eliminates the diagnosis of neurosyphilis in early cases has been shown to be erroneous. Merritt, Adams, and Solomon[3] recently reported an analysis of the blood and spinal fluid Wassermann reaction in 80 cases of acute syphilitic meningitis. The blood Wassermann was positive in 48 and negative in 26 with 6 having no record. The spinal fluid Wassermann was positive in 69 and negative in 11. It was pointed out that "all of the cases with negative spinal fluid Wassermann reactions showed abnormalities in the fluid, indicating an active meningitis, i.e., pleucytosis, increased protein, or abnormal gold curve."

The first point of this discussion is that a negative blood or spinal fluid does not alone eliminate the diagnosis of neurosyphilis; I would add, nor does a negative history or examination.

Those of us in neurology are often impressed with the absence of a sore or secondary eruptions in the history of treated or untreated patients who have completely positive neurosyphilis. The observation has been made that individuals who have neurosyphilis frequently do not recall having either penal sore or secondaries. Then there is the asymptomatic neurosyphilis, which presents positive history, positive blood and spinal fluid, without subjective or objective neuropathy. I have just reported with follow-up 222 such cases treated with fever.

I have selected from our files a group of cases with negative blood and spinal fluid serology at the time of examination that have been diagnosed neurosyphilis and treated. The diagnosis was made on the complete picture; namely, positive history and positive findings other than serology.

We were strongly influenced by a history of penal

*Read at the annual meeting of the Medical Society of Virginia in Roanoke, October 13-15, 1947.

[1]Dattner, Neurosyphilis, Grune & Stratton, 1944. pp. 69, 71.

[2]Wertham & Wertham, The Brain As An Organ, Macmillan Company, 1934. pp. 491-492.

[3]Merritt, Adams & Solomon, Neurosyphilis, Oxford University Press, 1946. p. 41.

sore, of syphilitic husband or wife, the story of a few shots, sensory variations, cranial nerve defects, reflex changes, loss of muscle control, spinal fluid findings of increased cell count, increased protein and positive colloidal gold curve. It was on the basis of these positive findings, in spite of negative serology, that we have used the working diagnosis of neurosyphilis.

In a consultative practice where one sees usually the complicated and atypical syndromes, we accumulate atypical cases. This has made it possible to collect the following cases that I wish to review as examples of neurosyphilis with negative serology.

The second point is that with therapy a fairly good number of these individuals have been able to return to work without their debilitating complaints, which had not responded to rest and other non-specific treatment.

Case 1. EAN, age 48, *Presenting Symptoms*, September 10, 1942. Ringing in right ear; headache; nausea; pain in left ankle. Duration 1 year.

Story: Onset with throbbing on side of head and vomiting about 1 year previously. Had not worked since. Physical condition had been getting worse, resulting in weakness of right foot and wasting of left arm. Has had sharp pains in extremities; frequent paresthesias in all of these. Had gonorrhea but denied sore.

Neurological Examination:

(1) *Sensory Survey*: (Patient not cooperative) Touch reduced.

(2) *Cranial Nerves*: Fundi pale; left oculomotor weak; pupils react but small arc of constriction; left larger; nystagmoid movements; ptosis of left eyelid. Hearing—R.1/20—L.6/20.

(3) *Reflexes*: Deep hypoactive.

(4) *Muscular System*: Grip 110 in right and 40 in left; left side ataxia; Romberg slightly positive; gait flopping.

Laboratory: Spinal fluid and blood—negative.

Treatment: Malaria 70 hours above 102°.

Result: Returned to work as railroad engineer. Five years later (1947), developed severe arthritis and return of some of his mental symptoms after having several infected teeth pulled. (After inoculation with malaria, patient told that L.M.D. had given him a few shots many years ago. This was confirmed.) Did not maintain improvement.

Case 2. HBB, age 55.

Presenting Symptoms December 5, 1946: Onset two months previously. Legs hard to control; could not walk straight; would fall at times. Recurring attacks—Grand mal every 4 or 5 years for 20 years; petit mal every few months for 20 years.

Story: Penal sore developed 2 or 3 weeks after intercourse, treated by druggist with salve and took pills, 40 years ago.

Neurological Examination:

(1) *Sensory Survey*: Negative; subjective numbness sole of feet.

(2) *Cranial Nerves*: Hearing R. 10/20. L. 14/20.

(3) *Reflexes*:

A. *Deep*: Absent in lower extremities.

B. *Superficial*: Absent epigastric, lateral abdominals, hypogastric, and cremasterics.

C. *Pathological*: Absent.

(4) *Muscular System*: Unsteadiness of station; unsteadiness of gait; ataxia, upper and lower, marked.

(5) *Electroencephalogram*: Strongly suggestive of epilepsy with indications of a left sided focus.

Result—Better leg control—no spells since treatment.

Case 3. LAB, age 41.

Presenting Symptoms October 24, 1946: Vertigo (not able to work)—duration 3 weeks; trouble hearing, duration about 12 years; night back pain (cramps), duration about 15 years.

Story: Divorced husband has paresis at present.

Neurological Examination:

(1) *Sensory survey negative*

(2) *Cranial nerves*:

Optic nerve head, left, slight pallor; pupils irregular in shape, ptosis of right eyelid; hearing—profound bilateral loss; dizziness and unsteadiness precipitated by head movement.

(3) *Reflexes*:

A. *Deep*—right more active than left, lowers more active than upper extremities.

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B. *Superficial*—hypogastric absent.
C. *Pathological*—absent.

(4) *Muscular system*: Unsteadiness of station and gait.
Result—Back to work, symptoms improved *only*.

Laboratory: Cisternal fluid—clear; cells O; slightly increased pressure; globulin normal; total protein 20 mgms. (10-20 normal).
Colloidal gold 0000000000. Flocculation negative. Blood flocculation negative.

Treatment: Malaria, 95 hours above 102°. Penicillin 9,500,000 units, given 50,000 units every 2 hours.

Results: Back to work with less complaints; vertigo and night pain much better.

Case 4. JGP, age 49.

Presenting Symptoms May 5, 1946, indigestion—duration 21 mos.; dizzy spells—duration 1 yr.; nervousness—duration few mos.

Story: Penal sore and treated by L.M.D. 20 yrs. ago.

Neurological Examination:

(1) *Sensory survey*—negative
(2) *Cranial nerves*—negative
(3) *Reflexes*: deep—active and relatively equal
Superficial—abdominals sluggish; hypogastrics and cremasterics absent.
Pathological—absent.
(4) *Muscular System*—left lower ataxia; finger to finger poorly done.

Laboratory:
Cisternal fluid—clear; cells O; pressure normal; globulin normal; total protein 25 mgms. Colloidal gold 112210000. Flocculation negative. Blood flocculation doubtful.

Treatment: malaria 105 hours above 102°; penicillin 10,000,000 units, given 40,000 units every two hours.

Results: back at old job; doing well.

Case 5. ELB, age 43.

Presenting Symptoms June 1, 1944, deafness, bilateral; vertigo; unsteadiness of gait and station; weakness of left arm and leg—duration 8 months.

Story: Husband had syphilis.

Neurological Examination:

(1) *Sensory survey*—negative;
(2) *Cranial nerves*—slight pallor of optic nerve heads
(3) *Reflexes*: deep—hyperactive; superficial—hyperactive; pathological—negative;
(4) *Muscular system*—Romberg positive; gait unsteady; weakness left arm and leg; ataxia of left arm and leg.

Laboratory: Cisternal fluid—clear; pressure normal; total protein 40 mgms.
Colloidal gold 1121110000. Wasserman negative. Blood Wasserman negative.

Treatment: malaria 93½ hours 102° and over.

Results: Marked improvement; "legs and hands fine". Two years later, symptoms returned; was put on non-specific protein injections; only took 5. Again better.

Case 6. ACS, age 41.

Presenting Symptoms May 18, 1946, aphasia and weakness right side of mouth.

Story: Spells of aphasia—5 yrs. and 2 yrs. previously.

Neurological Examination:

(1) *Sensory survey*—negative;
(2) *Cranial nerves*—slight weakness of right facial
(3) *Reflexes*—deep—hyperactive, right leg greater than left; superficial—normal; pathological—negative
(4) *Muscular system*—right facial weakness.

Laboratory:
Spinal fluid—pressure 160; globulin strongly positive; total protein 160 mgms.
Colloidal gold 112333000. Flocculation negative. Blood serum—flocculation negative.

Treatment: Malaria 60 hours 102° and over. Fever stopped because of congestive failure.

Results: Aphasia and paralysis cleared up; returned to work.

Case 7. CDR, age 45.

Presenting Symptoms February 5, 1945, "Trouble controlling legs and feet", vertigo, insomnia, nervousness, duration 10 months

Story: 10 years ago had head injury, Wassermann found to be positive. No knowledge of how she could have syphilis; previously had had negative Wassermans. Treated for 5 years.

Neurological Examination:

(1) *Sensory survey*—left foot and leg "feel different" when touched.
(2) *Cranial nerves*: Hearing—R. 10/20. L. 16/20

(3) *Reflexes*:
A. *Deep*—hyperactive
B. *Superficial*—hypoactive

(4) *Muscular system*: Positive Romberg; unsteady gait; tremor of hands, tongue and chin. Ataxia of left leg

Laboratory: cisternal fluid—Cells O; total protein 20 mgms; Colloidal gold 0000000000. Flocculation negative. Blood flocculation negative.

Treatment: malaria 115 hours at 102° and over; pencillin 9,000,000, given 40,000 units every 2 hours.

Result: markedly improved; back to work.

Case 8. AGG, age 38,

Presenting Symptoms April 25, 1947, headache—6 or 7 years duration; gastric crisis— 1 year duration,

Story: Positive Wassermann 14 years previously; took 50 shots, since which time his Wassermann has been negative as far as he knows. Stopped work three weeks previously.

Neurological Examination:

(1) *Sensory Survey* negative.

(2) *Cranial Nerves*: blurring on nasal half of both optic discs; right pupil larger than left; diminution of hearing—R. 10/20 L. 15/20.

(3) *Reflexes*: Deep—Diminution in upper extremities
Superficial—Abdominals hyperactive
Pathological—Absent

(4) *Muscular System*—negative
Result—Improvement very slight.

Case 9. JS, age 43.

Presenting Symptoms August 2, 1943, unconscious spells; depressed.

Story: Diagnosed C.N.S. Lues with positive blood and spinal fluid; treated with 10 inductotherms; returned to work.

September 1, 1944, cisternal fluid clear; normal pressure; cells 4; total protein 15 mgms; colloidal gold 0000000000; Kolmer 4; Mazzini 2. Blood positive.

March 6, 1946, patient became depressed 3 weeks ago; hospitalized. Cisternal fluid—flocculation doubtful. Blood flocculation doubtful. Given Malaria 104 hours. 102° and over; pencillin (40,000 U q.2 h.) for 10,000,000 U.

January 1, 1947, cisternal fluid clear; no cells; normal globulin; protein 20 mgms; colloidal gold 0000000000; flocculation negative. Blood flocculation negative.

May 21, 1947, hospitalized for severe cramps in legs of 2 weeks duration. Treatment—penicillin (40,000 units q.2 h.)

June 7, 1947, received 5,760,000 units pencillin; discharged free of pain; comfortable since.

Case 10. CEF, age 41.

Presenting symptoms October 30, 1945, shooting pains in abdomen of 2 months' duration.

Story: Sore throat; positive Wassermann 1 year ago; had some shots.

Neurological Examination:

(1) *Sensory survey*: hypersensitive to pin at dorsal level, 7th through 9th on left; hyposensitive over external malleolus.

(2) *Cranial nerves*: A—R pupils; hearing R. 8/12 L.8/12.

(3) *Reflexes*:
Deep—hyperactive on left;
Superficial—hyperactive on left;
Pathological—absent.

(4) *Muscular system*
Gait unsteady on left foot; left heel to knee ataxia; intentional tremor of tongue

Laboratory: Cisternal fluid clear; pressure normal; cells 4; globulin normal; total protein 35 mgms; colloidal gold 0000000000; Wassermann negative. Blood Wasserman positive; flocculation positive.

Treatment: Penicillin (40,000 U q.2 h.), 10,000,000 units in 3 weeks.

Results: 4 months later Cisternal fluid clear; pressure normal; cells O; globulin normal; total protein 30 mgms; colloidal gold 0000000000; flocculation negative. Blood flocculation doubtful. Back at work—efficient and comfortable.

We observed very good results in eight of the ten patients, and some improvement in the other two.

In Summary: I have reported the foregoing as examples of cases with active neurosyphilis, nine of which had negative serology. One case had positive blood and spinal fluid when first seen, but later, with negative blood and spinal fluid, the patient developed severe shooting pains in his legs which responded to penicillin.

Tucker Hospital

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VAGINAL CERVICAL SMEAR IN THE DIAGNOSIS OF UTERINE CANCER

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Although recent investigations have broadened the concept of cancer and greatly increased knowledge along the biological, chemical, physical and genetic fronts, there is yet no single method of treatment applicable to all malignant neoplasms. There is no satisfactory method of treatment for late cancer. This is not to say that treatment methods are not specific; indeed, surgery and irradiation are invaluable therapeutic agents and do effect cure in ever increasing numbers as the knowledge of cancer biology increases and improvement in technic evolves.

Approximately 32 per cent of all cancer occurring in both sexes is found in the female organs of generation. Sixty-three per cent of all cancer in women has its origin here. The cure rate for genital carcinoma in women based on five year survival is about 40 per cent for cervical cancer and about 60 per cent for fundal cancer if the experience of large clinics with careful follow-up is analyzed. Cervical cancer, Group I (lesion limited to the vaginal portion of the cervix), is said to have a cure rate of about 80 per cent, while Group IV (parametrium involvement) has a cure rate of about 5 per cent. Obviously the stage at which the diagnosis is made has great importance.

For many years George N. Papanicolaou, Professor of Anatomy at Cornell University, studied the vaginal cytology of animals and of women. His interest was in vaginal cytology as related to cyclic endocrine physiology. During the course of these investigations, he observed unusual and bizarre cell forms in certain smears which arrested his attention. It was known that the endometrial, cervical and vaginal epithelia in women are constantly exfoliating under the stimulus of the ovarian sterols. It was reasonable to assume that cancer arising upon these epithelia might have the same property. Accordingly, investigation was made upon patients with known cancer and these unusual cells were frequently demonstrated. These observations were reported in 1941[1-2] and two years later the excellent monograph entitled the *Diagnosis of Uterine Cancer by the Vaginal Smear* was published by Papanicolaou and Traut.[2-3-6-8] Since that time Meigs,[5] Ayre,[12-13-14] Jones,[10] and Neustadter[9-10] and others[7-11-17] have studied large series of cases, reporting an accuracy in diagnosis of uterine cancer of 95 to 97 per cent, using the technique described by Papanicolaou and Traut.

TECHNIC FOR STUDY OF VAGINAL CYTOLOGY

Since February, 1945, the authors have studied 1816 vaginal smears upon 1320 patients. These patients were seen in private practice and in the hospital clinics of the American University of Beirut, at Beirut, Syria. The smear was taken on each patient admitted to the office or clinic irrespective of her complaint.

In the early part of the study, material was aspirated from the vaginal vault by means of a glass tube attached to a rubber bulb as originally described by Papanicolaou.[1-4] This was squirted out upon a glass slide and the vaginal secretion distributed evenly over the slide by rolling the glass tube back and forth over the secretion. More recently the material was taken from the vaginal vault with a small spoon curette and spread directly upon the glass slide. This was found to be somewhat more satisfactory because the heavy viscosity of many vaginal secretions made it difficult to aspirate. Quite recently Ayre has recommended taking the specimen directly from the cervical os with a wood spatula after introducing a speculum, since this gives a higher concentration of cancer cells in the smear and reduces the time necessary for the study of each slide. An additional advantage claimed for this method is that the use of a spatula takes the secretion directly from the external os and may remove sheets of cells, thus actually giving a surface biopsy. We have just begun to use this technic and it seems to have some advantages. It certainly reduces the time required for study of the slides and, in view of the fact that

about 93 per cent of all cervical cancer originates at the squamo-columnae junction, the malignant cells can be picked up directly from their site of origin. If such technic is employed, however, it should always be combined with a vaginal smear because in the latter one has a pooling of the exfoliated cells from both the cervix and the endometrium.

After the smears are taken and spread upon numbered slides, they are dropped while still wet into a wide mouthed jar containing equal parts of 95 per cent alcohol and ether. It is essential that the slides be dropped into this fixing solution before drying in order to preserve the morphology of the cells. The slides must remain in the fixing solution for at least one hour but may remain for days before staining. If the slides are to be mailed for examination a drop of glycerin is placed on the slide after removing it from the alcohol-ether and another slide placed directly on the glycerin covered smear.[12] A rubber band is put around the two slides and then they can be mailed in an ordinary slide-mailing carton to the laboratory where they are to be stained and studied.

METHOD OF STAINING

1. Leave slide in fixative containing 95 per cent alcohol and ether in equal parts for one hour.
2. Rinse successively in 70% alcohol, 50% alcohol and distilled water.
3. Place slide in solution of Harris hematoxylin (Ortho Mod.) for four minutes.
4. Rinse well in distilled water.
5. Place slide in solution of 97 c.c. of 70 per cent alcohol plus 3 c.c. of strong ammonia for one minute.
6. Rinse successively in 70% alcohol, 70% alcohol, 80% alcohol and 95% alcohol.
7. Place slide in OG 6 for one and one-half minutes.
8. Rinse slide four times in 95% alcohol and four times in another solution of 95% alcohol.
9. Put slide in EA 50 for two minutes.
10. Rinse slide four times in 95% alcohol, 100% alcohol and xylol. (Stains are available from the Ortho Research Foundation, Raritan, N. J.)

NORMAL VAGINAL-CERVICAL-ENDOMETRIAL CYTOLOGY

During the reproductive years in patients who have full ovarian function, the smears will be seen to contain numerous cornified and precornified vaginal epithelial cells. These cells are large, irregular in shape with clear cytoplasm and a pyknotic nucleus. Occasionally one finds a small vacuole in the cytoplasm of a healthy vaginal cell; however, this is not the rule, the cytoplasm usually being clear and translucent. Occasionally granules may be found in the cytoplasm, this is indicative of an old and dying cell. The nucleus is always centrally located, has a sharp clearly defined nuclear membrane, nucleolus is rarely seen under high power magnification and a chromatic network is not visible. The fully matured cornified cell takes the red or orange stain, the acidophilic property being the result of a large amount of glycogen in the cytoplasm. The precornified cell, being basophilic in its staining properties, has a blue-green color. Leucocytes are seen in small numbers even in perfectly normal vaginal smears, but may be abundant where infection of the endocervix or vagina is present. Their number is also increased in the immediate postmenstrual phase and during the two or three days preceding menstruation. Large monocytes are occasionally seen and may be confusing since these cells have a large rather deep staining nucleus which occupies a large part of the total cell volume. However, the symmetrical and regular shape of the nucleus and the absence of a chromatin network serves to differentiate it from a malignant cell. Giant cells are seen quite frequently and may also be confused with malignant cells, but here again the nuclear changes of malignancy are absent. Basal cells of the vagina are round or are elliptical, the nucleus is vesicular and the cytoplasm takes the basophilic stain. Basal cells from the cervix as contrasted with those from the vagina are usually smaller and are most commonly seen surrounded by mucous. Basal cells are abundant during the menopause and their number in relationship to the cornified cells serves as a rough guide to the degree of estrogen deficit in the patient. Following irradiation in castrating dose and often subsequent to bilateral oophorectomy one finds an exceedingly high incidence of basal cells, often making up 90 per cent of the total epithelial cell family.

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Endometrial cells are commonly seen only during menstruation but rarely may be found in patients with functional menstrual bleeding of non-neoplastic origin. As experience has accumulated in the study of vaginal cytology, it has become increasingly apparent that irradiation either by radium or x-ray produces morphologic changes in the genital epithelium which may persist for years following the irradiation. The immediate effect of irradiation is to cause marked swelling in both the nucleus and cytoplasm, often resulting in the presence of epithelial cells which are blown up to an enormous size. Monocytes and giant cells are abundant in patients who have been irradiated and may confuse one even after he has had considerable experience in the study of these smears. Indeed, we would hesitate to express an opinion on the probable presence or absence of malignancy in any patient who has undergone irradiation for any purpose. The cellular picture is so confused as to test the ingenuity of even the most experienced pathologist.

CANCER CYTOLOGY

The presumptive diagnosis of uterine cancer from the vaginal spread depends upon the finding of malignant cells separately or in groups intermingled with the normal vaginal cytology. The conventional histologic methods for the diagnosis of cancer by biopsy depend upon two well established and observed phenomena, namely, invasion of the basal membrane in neoplasms of epithelial origin and alterations in the size, shape and chromatization of the cell nuclei.

On the vaginal smear, the first criterion for diagnosis of malignancy is absent since the only cells seen are those exfoliated from the periphery of the tumor. Consequently, the presumptive diagnosis of cancer rests almost entirely upon nuclear changes. The nucleus of the malignant cell is hyperchromatic, usually large in relationship to the cytoplasm and often irregular in shape. The chromatin network is highly developed and under high power of the microscope can be distinguished. The nuclear size is such that it often occupies most of the total cell volume, leaving only a small periphery of cytoplasm visible. The round or slightly ovoid shaped nucleus characteristic of the normal cell is found but is accompanied by the most bizarre variations when one examines the entire smear. The nucleus may take on a tadpole shape with a long fibril-like tail, or it may be in the shape of a crescent and sometimes elliptical. Mitotic figures are rarely seen because the active mitosis in the malignant tumor is to be found in the basal portion of the tumor where the proliferation is occurring, the cells which are exfoliated being the mature often dead cells which have been sloughed off the surface. Vacuoles are seen frequently in the small rim of cytoplasm of the malignant cell, but this in itself does not enable one to say that the cell is malignant, for vacuoles of the cytoplasm may be seen in the mature normal cervical or endometrial cytology. Frequently groups *in situ* of desquamated or malignant cells are found, often having an appearance not unlike the cut section from a biopsy. Red blood cells are almost invariably found in the malignant smear, and leucocytes are always found. Malignant giant cells are not uncommon and may cause some difficulty in differentiation.

Presumptive diagnosis of cancer can rarely be made on the basis of a single microscopic field; it must depend upon examination of the entire spread so that one gets an idea of the degree of variation in nuclear size and shape.

REVIEW OF CASES

In our report there are 28 proven cases of uterine cancer in 1320 patients studied. Of this group there were 24 cases of cancer arising in the cervix or fundus in whom the clinical history and pelvic examination were such as to make one very suspicious of malignancy and would have under any condition indicated a biopsy for diagnosis. Fourteen of these cases obviously were malignant on the basis of pelvic and speculum examination alone. One could have made a diagnosis in this group without either the vaginal smear or biopsy. Indeed, in 6 of these cases the diagnosis had already been confirmed before they were referred to the authors. There were 10 cases who, upon pelvic and speculum examination, had a lesion of the cervix which was visible and bled readily on touch or had fundal enlargement with a history of bleeding, and in these cases diagnosis was made and in time would have been made without the aid of the vaginal smear. This leaves four patients without clinical history and with no findings on pelvic or speculum examination who showed a positive vaginal smear and the diagnosis of uterine cancer was subsequent-

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ly confirmed by biopsy or operation. In other words, it is fair to say that, of 1320 patients studied, the vaginal smear picked up the diagnosis of cancer in 4 patients in whom the diagnosis would otherwise have been missed. These four cases are reported in some detail:

CASE REPORTS

Case 1. M. R. B., aged 42. This patient was seen in July, 1946. Her chief complaint was "hot flushes", the menstrual cycle had been regular and there was no intermenstrual bleeding and no vaginal discharge. The patient had borne three living children, the youngest being 8 years of age. There was a history of uterine carcinoma in the mother and a younger sister was said to be cured following a radical amputation of the breast for cancer of that organ.

Pelvic examination revealed a normal introitus of the vagina. The cervix was the site of a bilateral laceration but there was no erosion, no eversion and no evidence of endocervicitis. The uterus was normal size and the tubes and ovaries were not palpable. The vaginal smear showed an abundance of highly anaplastic epidermoid cancer cells. (Fig. 1). Patient was admitted to the hospital on July 18, 1946, where a curettage of the uterus and cervix was done. A small irregular area on the anterior cervical canal ½ cm. above the external os was found. This was submitted for frozen section examination and the patient was immediately subjected to a total hysterectomy.

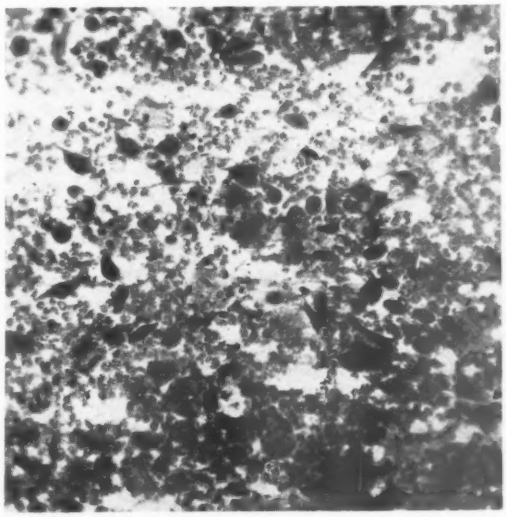

Fig. 1. There are many hyperchromatic cervical epithelial cells, nuclei are irregular in size and shape. In many of the cells, a well developed chromatin network is discernible. There are many leucocytes and occasional red blood cells.

Pathologic report disclosed a specimen consisting of uterus and cervix. There was a moderate fibrosis throughout the myometrium. The endometrium was grossly normal. On the anterior wall of the cervix there was a small elevated area, 2 mm. in diameter, the surface of which had apparently been traumatized. Microscopic examination revealed an endometrium in the proliferative phase. Cervix section taken from the anterior cervical canal, ½ cm. above the squamo columnae junction, showed a highly anaplastic grade IV epidermoid cancer.

Case 2. C. R. S., aged 32. She was first seen on January 8, 1947. At this time her chief complaint was sterility. Patient had been married five years without conception. The menstrual history was normal. There was no intermenstrual bleeding and no bleeding following coitus.

Pelvic examination revealed the cervix posterior and it was normal in appearance. The cervical epithelium had a clear shining surface. The uterus was normal size and anterior, freely movable, and the adnexa were not palpable. Vaginal smear done on January 8, 1947, revealed a few scattered epithelial cells having a morphology compatible with malignancy. The smear was repeated on January 11. At this time the smear was taken directly from the external os and the cervical canal. The slide was seen to contain numerous hyperchromated nucleated cells which were highly suspicious of cancer (Fig. 2). She was admitted to the hospital January 18, 1947. At this time a transverse incision was made in the cervix and the anterior wall of the cervix everted with a tenaculum. A granular area which bled on touch was found in the posterior cervical canal near the external os. Biopsy was taken at this area and a frozen section was done immediately with a report of squamous cell cancer of the cervix. 50 mgm. of radium in brass and rubber was placed in the cervical canal, and 50 mgm. of radium in brass and rubber tandem was placed across the external os. This was left in place for 50 hours and then removed.

Pathologic report on paraffin section revealed a squamous cell carcinoma of the cervix, Grade I.

Case 3. C. T. R., aged 28. Patient was first seen on November 18, 1945. At that time she com-

plained of spotting following coitus. The menstruation had always been irregular with a cycle ranging from 22 to 38 days. She was the mother of

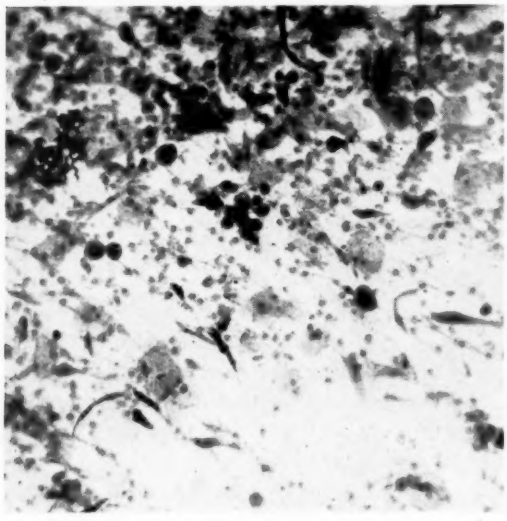

Fig. 2. Normal cornified vaginal epithelial cells with pyknotic nuclei are seen along with many normal basal vaginal cells. Near the center of the field there is a cluster of cancer cells in which the nuclei are hyperchromatic and scattered throughout the field are several elongated "tadpole" cells.

two children, aged 8 and 4 years, the second delivery having been complicated by a placenta praevia.

Pelvic examination showed that the external os was the site of a stellate laceration. There was some erosion but nothing to arouse the suspicion of malignancy. A cervix smear was taken with cotton applicator and another taken from the vagina. The cervix was then electrically coagulated in the os. The vaginal smear and cervical smear showed numerous anaplastic cells. (Fig. 3). There was some blood and much mucus in the smear. Because of the suspicious nature of the cells, the vaginal smear was repeated three days later and the previous findings confirmed. She was admitted to the hospital where a cervical biopsy was done and 50 mgm. of radium in brass and rubber placed in the cervical canal and 50 mgm. of radium in a brass and rubber colpostat placed across the external os. This was left in place for 48 hours and then removed.

Case 4. A. R. C., aged 39. This patient was first seen on January 25, 1946. At that time she gave a history of regular cyclic menstruation, her only complaint being a severe and progressive dysmenorrhea of five years duration. There had been no alteration in the amount or duration of the flow.

Pelvic examination disclosed a large nodular uterus apparently the site of multiple fibroids. The cervix had a bilateral laceration with slight eversion of the anterior cervical lip. There was no bleeding upon manipulation of the cervix. The cervical smear taken at this time revealed numerous hy-

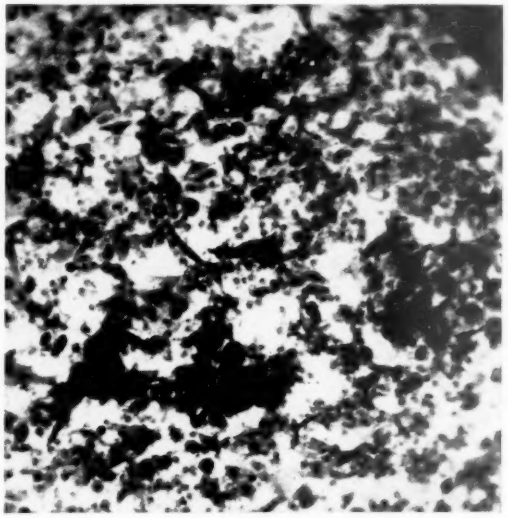

Fig. 3. The smear is filled with many leucocytes and red blood cells. Near the center of the field there is a large cluster of hyperchromatic, highly anaplastic cervical cancer cells. Just beneath the cluster there is an elongated cell of bizarre shape which represents a type frequently seen in malignancy.

perchromatic cells with irregular shaped nuclei. (Fig. 4).

The smear was repeated one week later and the same findings were present. She was admitted to the hospital and a biopsy of the cervix taken from the anterior lip. Biopsy showed a squamous cell carcinoma of the cervix, Grade III.

Treatment consisted of 50 mgm. of radium in brass and rubber in colpostat placed in the vaginal vault. This was left in place for 48 hours. Seventeen days after irradiation, the patient was subjected to a total hysterectomy.

Pathologic report following operation showed no evidence of malignancy on multiple sections of the cervix. There was marked distention of the epithelial cells, the nuclei and cytoplasm of many cells having a blown-up appearance characteristic of the early post-irradiation period.

SUMMARY

Papanicolaou has made a fundamental contr bution to the early diagnosis of uterine cancer by calling attention to the fact that exfoliated cancer cells appear at the cervical os and in the vagina during the very early stages of endometrial and cervical cancer. These cells can be picked up on smears and identification is made easier by the special staining technique of Papanicolaou which emphasizes the nuclear morphology of the epithelial cells. The individual cancer cell in the vaginal spread separated from its histological relationship to other cells at the site of origin presents some difficulty in identification, but its nuclear changes are sufficiently characteristic to enable one to be suspicious that the cell is not one usually seen in the normal vaginal spread. By careful examination and comparison, one is able to distinguish the hyperchromatic, well developed chromatin network and the irregular shape and size of the malignant nuclei as differentiated from the normal nuclei. Careful search occasionally reveals exfoliated cells occurring in groups or sets and recognition is made easier. Blood is usually present in the malignant smear along with cellular debris. Normal cervical and vaginal epithelial cells are always found mixed in with the cancer cells.

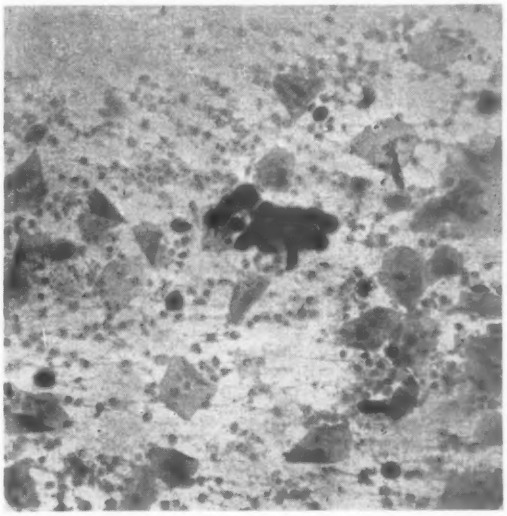

Fig. 4. There are many normal cornified vaginal epithelial cells and many leucocytes. Near the center of the field there is a sheet of hyperchromatic irregular shaped nuclei which are typically malignant in appearance.

It cannot be said that the average gynecologist interested in vaginal cytology is at this time capable of making a definite diagnosis of uterine cancer on the basis of the vaginal spread alone. Certainly for the average gynecologist without particular training in pathology there are many pitfalls of which he must beware. Into this category falls the author, and it is only by frequent consultation with a senior trained pathologist that we hope to gain some degree of proficiency in the verification of these smears. Experience, however, will enable the careful observer without special training to be suspicious of certain cells and thus comes the hope that in time the laboratory technician may be able to screen these smears in such a manner as to pick up the suspicious ones which can then be studied by a trained cytologist. For the time being, however, the diagnosis must be left to one with special training in pathology and it is not to be undertaken lightly by the inexperienced.

CONCLUSIONS

1. The Papanicolaou stain and cytologic study of the vaginal and cervical smear provides a satisfactory means for screening large numbers of patients in an effort to make the diagnosis of uterine cancer before clinical symptoms or signs leads one to be suspicious.

2. Accuracy of the method as compared with biopsy has been 92 per cent to 95 per cent in those clinics where trained personnel is available for study of the vaginal cytology. The limited number of cases in our series makes statistical conclusions impossible. There were 28 proven cases of carcinoma in 1320 patients studied.

3. There were 24 cases with carcinoma of the cervix or fundus in whom the clinical history or pelvic examination made the diagnosis apparent or aroused suspicion to the point where biopsy and currettage was done and would ordinarily have been done even before the era of vaginal smear. In all of these cases the vaginal smear was positive for cancer cells but these cases would have been diagnosed without the aid of the vaginal spread, and therefore are considered unimportant in this review.

4. Four cases of asymptomatic, unsuspected cancer of the cervix are reported in four patients upon whom routine vaginal, abdominal and speculum examination had failed to arouse suspicion of the lesion. The diagnosis in each case was confirmed

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by pathologic study of the removed tissue.

5. There were two cases upon whom cancer was suspected on the basis of suspicious cells but in whom thorough curettage and biopsy of the cervix failed to confirm the diagnosis. On one of these patients a total hysterectomy was performed for multiple fibroids and multiple sections of the endometrium and cervix failed to reveal evidence of cancer.

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Medical Arts Building.

Floral Eponym

BRUNFELSIA

BRUNFELS, OTTO, 1464-1534

Brunfelsia is a genus of 20 species of tropical shrubs or trees of the potato family. B. Americana Lady-of-the-Night, Franciscan Nightshade, is noted for its yellowish-white, extremely fragrant flowers.

Otto Brunfels was one of the earliest German botanists. He graduated at Basel.

TETANUS NEONATORUM*
Report of a Case With Recovery

JOHN S. WEITZEL, M.D.,
Richmond, Virginia.

During the first twenty-five years of the 20th century as well as during the 19th century, tetanus neonatorum was an extremely frequent, and usually fatal disease; to-day it is, fortunately, a medical curiosity. The marked decrease in the number of cases reported in the past twenty years is due to the hospitalizing of most obstetric cases and the modern methods of obstetric asepsis. Only three cases in 20 years were reported by Cook County Hospital. This disease is caused by the Clostridium bacillus, discovered by Nicolaier in 1885. Its portal of entry is usually, if not always, through the unbilical cord in cases occurring within seven to ten days after birth. Ramon C. Negro and Tolosa Manuel, in reporting two cases cured with penicillin, mentioned the fact that the Clostridium tetani bacillus is known to be susceptible to this drug.

The incubation period is from three to ten days, average seven days. The length of this period is related to the time of the infection, which usually occurs between the ligation of the cord and complete healing.

ETIOLOGY

Unclean surroundings, contact with soil, unclean instruments such as contaminated cord scissors. Paradoxically as it might appear, the case I am reporting was delivered in one of the best hospitals in Richmond, with the usual sterile linen and sterile instruments. However, the mother made such rapid progress she was delivered in her room and not the O. B. room, and as frequently happens, a copious bowel movement took place at the same time the infant was born and the cord became contaminated with the mother's stool.

PATHOLOGY

There are a few lesions found in the nervous system. Cerebral edema and congestion, also meningeal hemorrhage are found.

DIAGNOSIS

The history is practically pathognomonic, that is, refusal to nurse on account of increasing difficulty in opening the mouth, occurring about the sixth day. It should be differentiated from cerebral hemorrhage which usually occurs 24 to 48 hours after birth, associated as a rule with a bloody spinal tap.

It should also be differentiated from streptococcic or meningococcic meningitis, the former known as sepsis neonatorum in which case streptococci will be found in the spinal fluid or meningococci later. Tetany appears later in life and presents a characteristic picture as a rule.

SYMPTOMS

Trismus is usually the first symptom noticed for feeding by mouth becomes impossible and the mouth can not be opened for examination. Stiffness of the muscles of the back follows and finally stiffness of the upper and lower extremities. The arms are held close to the side, forearms flexed on the arms and the hands on the forearm, the fingers are balled up into a fist clinched on the thumb. The forehead is wrinkled, eye lids squeezed tight shut, the mouth presents projecting lips like a snout with the corners of the mouth drawn into a sardonic grin. The abdominal muscles are set, practically board like. The legs become stiff and usually crossed in a scissors fashion. General twitching contraction of all the muscles follows which is produced by the slightest irritation, even tapping the baby's bed lightly, suddenly turning the light on, loud noises or inserting the gavage tube.

PROGNOSIS

The prognosis is grave. Mortality rate 90 to 95 per cent. The longer the incubation period, the more favorable the prognosis. While a majority of the authorities give a 90 to 95 per cent mortality rate, some authors give a 50 per cent mortality rate, and others say 75 per cent is about the average.

PROPHYLACTIC TREATMENT

Where tetanus neonatorum is endemic, the cord adjacent to the infant should be tied twice, it should be cut between the ligatures and tincture of iodine applied freely to the stump and adjacent area.

*Read at the annual meeting of the Medical Society of Virginia in Roanoke, October 13-15, 1947.

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ACTIVE TREATMENT

1. *Nourishment.* Some authors recommend nutrient enemas of mothers milk, or milk formula. This I consider a loss of time as there is practically no digestive function in the rectum. Other authors recommend feeding by dropper. However, in a severe case and most cases are severe, the infant is unable to swallow. I recommend gavage, regardless of convulsive seizures, using standard new born milk formulae.

2. *Antitetanic antitoxin.* This should be administered in large doses intravenously and intramuscularly.

3. *Sedation.* This is most important. Bratusch-Marrian found that the deaths in his series were greatly reduced by the administration of 5 c.c. of 4 per cent magnesium sulphate solution subcutaneously every second day. Magnesium sulphate, as you know, is a respiratory depressant and, with the infant usually cyanotic from the frequent convulsive seizures and artificial respiration necessary to recussitate the infant, I personally consider this not a treatment of choice, but rather contra-indicated unless the convulsive seizures are mild and infrequent. Most authors recommend chloral hydrate 1 to 2 grs. every 4 to 6 hours, well diluted in the form of a retention enema; bromides and morphine in very small doses as 1/250 gr. not often repeated are also recommended by some authors. I wish to state that complete sedation is absolutely necessary to recovery and in my opinion neither chloral hydrate nor bromides by rectum will supply sufficient sedation in severe cases, while morphine in a new born is a dangerous drug and should not be used.

Protection from light and noise is also important in the treatment of this disease as the turning on of a light or any noise not necessarily loud will precipitate a convulsion in the acute stage.

CASE REPORT

HISTORY. A white female aged 7 days, of normal delivery, was seen at her home August 21, 1946, having been discharged the day before from a local hospital as normal clinically, and with the history of being treated as a normal infant since birth.

Physical Examination. Infant in generalized convulsion, temperature 100.8 rectal.

Skin—Two large vesicular lesions the size of a silver dollar on each shoulder.

Eyes—Tightly closed, in fact squeezed tight shut.

Face—Trismus, mouth snout-like with white froth being expelled from the oral orifice.

Abdomen—Board like.

K. J.—Not obtainable, legs too rigid.

Umbilical stump normal.

Sent to isolation in Medical College of Virginia Hospital at once.

August 22, W. B. C. 30,000. Blood normal otherwise. Spinal fluid negative.

DIAGNOSIS. Tetanus neonatorum, pemphigus neonatorum, congenital structural scoliosis of dorsal and upper lumbar vertebrae with convexity to the left. Asymmetry of the head on right side posteriorly, the occipital bone overlapping the parietal bone, spina bifida of the cervical vertebrae, and umbilical hernia.

TREATMENT AND CARE.

1. *Formula*—

Evaporated Milk 4 Oz.
Water 8 Oz.
Cartose 1 tablespoonful
4 x 3 Oz.
Give by nasal feeding or gavage.

2. Duo-sulfon ointment applied to skin lesions twice daily.

3. August 22, 10,000 units of tetanus antitoxin was given intravenously and 10,000 units of tetanus antitoxin intramuscularly. The following day August 23, an additional 20,000 units of tetanus antitoxin was given intramuscularly after a negative skin test for sensitivity. A total of 40,000 units of antitetanic antitoxin was given.

4. A total of 220,000 units of penicillin was given and it was discontinued August 29, on the 8th day of the disease. On the 13th day of the disease, September 3, the pemphigus neonatorum was completely cured and the milk formula increased to

Evaporated Milk 6 Oz.
Water 12 Oz.
Cartose 2 tablespoonsful
6 x 3 Oz.
All feedings still given by gavage.

Weight 8 lbs. 5 oz. Through this stormy course the infant had made a net gain of nine ounces and had not regurgitated. On September 5, the 15th day of the disease, at 3:15 A. M. the following notes were taken from the remarks column. Temperature 106.6. Convulsing continuously since

2:40 A. M. Respiration shallow and very rapid—approximately 120 per minute. The infant was as rigid as a board from its occiput to its heels. Realizing that sodium luminal in ¼ gr. doses hypodermically q 4 H had little or no effect avertin in 200 mgm. doses q 8 h by rectum was ordered September 6. This medication proved very successful for, not until the avertin was started, was there any cessation in the frequency or severity of the convulsions. This dosage of avertin was continued for seven days when the dose was cut to 150 mgm., the interval gradually lengthened and discontinued on September 23, the 33rd day of the disease. On September 21, the Breck Feeder was started successfully.

The following day, September 26, the 36th day of the disease, a regular nursing bottle and nipple was ordered and proved successful. On the 38th day of the disease, September 28, 1946, the infant was discharged from the hospital as well.

SUMMARY AND CONCLUSIONS

1. Tetanus neonatorum is an uncommon disease in the United States.
2. Greater care should be exercised in the treatment of the umbilical cord if and when the cord has been exposed or subjected to ground or fecal contamination.
3. An immediate differential diagnosis should be made between tetanus neonatorum and sepsis neonatorum.
4. The treatment of infants with tetanus Neonatorum can be confined to five points:
   a. Antitetanic antitoxin in large doses at once both intravenously and intramuscularly.
   b. Penicillin intramuscularly in adequate dosage spread out over the acute stage.
   c. Complete sedation.
   d. Nourishment.
   e. Complete co-operation of House Staff and Nursing Staff, and I want to thank both of these organizations at the Medical College of Virginia most heartily for their untiring efforts in this case, without which I feel confident this infant would not have survived.

Maury Place.

DISCUSSION

DR. LEE E. SUTTON, Richmond: In discussing Dr. Weitzel's case, for which he deserves much credit for saving the patient's life, it may be compared with other tetanus cases admitted to the pediatric service of the Medical College of Virginia Hospitals.

During the last fifteen years there have been admitted to the pediatric service thirty-seven cases of tetanus, eleven of which died, a mortality rate of 30 per cent. Among the cases admitted there were four who could be diagnosed as tetanus of the newborn. The oldest was eleven days of age. Three of these cases were admitted to the hospital within the last year. Among these newborns there was a mortality of 50 per cent.

Early treatment for tetanus neonatorum cases is very important. In outlining a treatment one must understand the pathology of the disease. The etiological agent is the Clostridium tetani bacillus, which has penetrated through the epidermal lining of the skin or mucous membranes of the oropharynx or gastro-intestinal tract. The umbilical vessels of the newborn, following birth, may be a portal of entry.

After entering the body, the bacilli remain as a focus of infection and do not enter the blood stream. The spore-bearing bacilli at the focus of infection under anaerobic conditions develop into active toxin producing bacilli. They give off an exotoxin which is absorbed into the surrounding tissues and by the way of the lymphatics and blood stream is carried to the nervous system.

It is thought by observers that the toxin affects the nerve cells themselves as well as the myoneural junctions, therefore producing a generalized spastic paralysis. Death results from asphyxia caused by the spastic paralysis of respiratory muscles or by secondary infection.

The treatment now recognized consists of treating the focus of infection, the toxemia, the spastic paralysis, the nutrition and the prevention of secondary infections.

The toxemia should be neutralized by antitoxin, dosages ranging up to one hundred thousand or more units. This will neutralize any free toxin in the blood stream or tissues. The toxin after it has once attached itself to the nervous system cannot be neutralized, therefore, the amount of fixed toxin in the nervous system determines the prognosis. The earlier the neutralization of the free toxin in the tissues the better the prognosis, since there will be less fixed toxin in the nerves which cannot be neutralized.

Due to the delay of administration of antitoxin, without favorable results, some observers have gone on record as saying that they do not believe antitoxin is of any value.

The local infection has to be treated. When recognized, incision and cauterization is the treatment of choice. In those cases where the focus cannot be determined penicillin should be used in large doses since there has been reported some deleterious effects by penicillin on the tetanus bacilli.

Tetanus spasm in a patient must be relieved before it becomes too detrimental. The drug of choice should be a depressant and one that has the least effect on the respiratory center; also, one that the physician is familiar with and can give in large enough doses to obtain the

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desired results without handicapping the patient. If the spastic paralysis can be relieved sufficiently to save the patient's strength and prevent asphyxia, the patient should recover.

Secondary infection such as bronchial pneumonia and sepsis must be prevented.

Nutrition of the patient should not be overlooked and gavage feeding or parenteral feeding or both may have to be resorted to.

Prophylactic treatment through administration of tetanus toxoid has apparently given results in the army in the prevention of tetanus, with the demonstration of immune bodies in those inocculated. There is no protective means of immunizing the newborn against tetanus at the present time, except through aseptic technique during delivery.

QUESTION: How much antitoxin was used in this case?

DR. WEITZEL: Twenty thousand units.

Van Meter Prize.

The American Goiter Association again offers the Van Meter Prize Award of Three Hundred Dollars and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The Award will be made at the annual meeting of the Association which will be held in Madison, Wisconsin, May 26th, 27th, and 28th, 1949, providing essays of sufficient merit are presented in competition.

The competing essays may cover either clinical or research investigations; should not exceed three thousand words in length; must be presented in English; and a typewritten double spaced copy sent to the Corresponding Secretary, Dr. T. C. Davison, 207 Doctors Building, Atlanta 3, Georgia not later than March 15th, 1949. The committee, who will review the manuscripts, is composed of men well qualified to judge the merits of the competing essays.

Broadcast on Diabetes.

In observance of National Diabetes Week, the American Medical Association will sponsor a special radio program, "Wanted: Unknown Diabetics," which will be broadcast on NBC stations December 11.

National Diabetes Week, December 6 to December 12, will be sponsored by the American Diabetes Association.

The program and other events during the week will attempt to warn an estimated 2,400,000 persons in the nation who do not know that they are diabetics or potential diabetics.

Speakers on the A. M. A. broadcast will be Dr. Elliott P. Joslin and Dr. Howard Root, Boston; Dr. Charles H. Best, Toronto, Canada; Dr. Lester J. Palmer, Seattle, western vice president of the Diabetes Association; and a patient who has successfully coped with diabetes for more than 25 years.

Music by the NBC orchestra, dramatizations written by William J. Murphy and directed by Norman Felton, and a memorial tribute to Sir Frederick Banting and to the dogs which made his experiments possible will be presented.

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CORRESPONDENCE

Patriotic But Not Practical!

TO THE EDITOR:

The recent editorial in the *J.A.M.A.* concerning the shortage of physicians in the military establishment (also General Bliss' letter) appeals to the patriotic side rather than the practical one. The services need to offer more security to the individual physician but apparently they blithely overlook the several thousand dollars invested in equipment and office space as well as the fact that few practices are ready made. One can't reinvest in starting anew too many times in a life time nor expend one's self repeatedly in rebuilding a dormant or scattered practice. My five years of service presents me with first hand knowledge of these problems.

The military wants volunteers for short term duty—they have not appeared because these basic things are overlooked.

The need for "regulars" is partially blocked by physical standards which are too rigidly adhered to. Many of us served well with moderate physical defects which did not hinder our medical capacity yet would not be considered for regular appointments, no matter how learned or useful we could be. Wartime incurred disabilities come under the same heading.

They need a change of policy with permanent rather than temporary appointments, less rigid physical standards, better recognition of service incurred disability, etc., to begin to look attractive.

The draft of physicians is rather inevitable to meet the needs and first call should be given to the recent graduates, those previously essential and deferred for training, etc., then those with least active service, and last those with longer periods of service.

K. N. BYRNE, LT. COL. RES.

A Plea For a Shorter Road to Medicine.

TO THE EDITOR:

Under organized medicine, dentistry and pharmacy, the pendulum has swung too far, and unless guided back by the same organizations will swing entirely too far in the other direction.

My class in 1905-1909 had four years in medicine. Dentistry was three years and pharmacy two. This was not extreme and no particular pre-med requirements were enforced. Our average was not nearly so good as a high school graduate of today, but our vocabulary was widened studying Osler, just as fast as it would have been studying Shakespeare. Some very fine students were not so very far above the free school courses but some Latin was considered essential. Dr. Moore taught Latin grammar to a few and for only a short while.

Many visiting physicians had had only two and three years in medicine.

Two years afterwards, organized dentistry went off on a tangent and got a law passed requiring dental matriculates to have the M.D. degree! Two or three lads actually matriculated for the combined course but the law was repealed two years later.

Now a pretty big clamor is going up for medical and dental relief and many are the panaceas offered. One state actually proposes a loan to choice students of $10,000, but why give this for an education that is superfluous with foreign languages, algebra, ancient history and unrelated sciences? Why burden a bright mind with the long course and burden the student with a $10,000 debt? If he doesn't snap under such a strain, then he is "unsnappable".

Why not make the course shorter? Eliminate the two and three years of pre-med entirely. Give the four year course but allow students to major in certain things as they go along. One might major in about the ten major specialties of today. Then he would step from school prepared to do internship in the specialty he had majored in. This is not intended to cut out general practice but major in that too, for a good percentage would be proper.

My little knowledge of late history has shown all too plain how one extreme follows another. We have surely gone to the extreme in our medical and dental education. I trust that we do not swing to the other extreme but this will happen unless we ourselves work for a reform for a shorter instead of a longer course.

Also while on the subject, our Spanish speaking students should be sent to the many good schools in South America—say Rio, Habana, Buenos Aires, etc. What a burden it was on a classmate of mine

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to learn medicine in a language he could hardly speak.

Although the most comprehensive course is given in our medical schools, nothing is taught about finding a suitable location. Every young graduate should have his location selected for him by the Dean and others (say welfare committee) for a period of three years.

It is, of course, anticipated that the interest of the graduate and interest of the state would be carefully studied. At the end of the three years perhaps the graduate would be a permanent fixture at the location selected for him, which should be a rural community or at least away from crowded cities.

A. B. GRUBB, M.D.

July 13, 1948
Cripple Creek, Virginia.

MISCELLANEOUS

The Responsibility of the Practicing Physician For Diabetes Detection

The discovery and treatment of diabetes mellitus at an early stage demands the attention of all practicing physicians. Failure to discover and treat diabetes early results in preventable disabilities and impairments of health. In the Diabetes Exhibit at the Annual Meeting of the American Medical Association held in Chicago in June, 1948, it was shown that the mortality rate for diabetics first seen when a complication had occurred was three times the rate for diabetics first seen earlier and before impairments had developed. Actually the future for the diabetic patient under modern medical treatment is brighter and more hopeful today than ever before.

In 1929, Dr. George H. Gigelow and Dr. Herbert Lombard began a study of chronic disease in Massachusetts which led to the publication of statistics showing that the number of diabetic patients in Massachusetts was far higher than had been heretofore thought. In 1935, a National Health Survey was conducted which confirmed these figures. In Oxford, Massachusetts results of a survey by the United States Public Health Service indicates that at least a million undiagnosed diabetics exist in the United States and Canada.

District and state medical societies now have the opportunity to take the lead in the fight against diabetes in response to an appeal to the practicing physicians of the United States, presently being made by the Committee on Diabetes Detection of the American Diabetes Association. This committee was appointed by Dr. Charles H. Best, President, at the Annual Meeting in June, 1948. Plans are being formulated for National Diabetes Week, December 6 to 12, 1948.

As a first step in a full-scale attack on diabetes, eighth among the leading causes of death, a medical society should appoint its committee on diabetes. The National Committee on Diabetes Detection stands ready to assist local committees in their work. Already the Committee is preparing material containing information on diabetes for use by the physician in his own town. These materials include programs for medical meetings, radio broadcasts and spot radio announcements for use by city and county medical societies, and suggestions for cooperation with local hospitals toward the control of diabetes.

The Committees on Post-Graduate Instruction in state and county societies should plan instructions and demonstrations in diabetes in county meetings this fall. Also, hospital staff meetings should provide a place on their program for diabetes. Committees on Public Relations and Public Information should plan meetings for instruction of laymen including patients, their families, and all others interested.

Women, too, have an important role to play in the fight to control diabetes. It is significant that diabetes is more frequent among women than among men. It is desirable to enlist the aid of women's organizations, especially the women's auxiliaries of the medical societies, as an adjunct to the program planned by medical societies.

Already a number of local diabetes associations affiliated with the American Diabetes Association have been formed. More such associations composed of physicians are needed. With the cooperation of the physicians within their area, these associations have accepted the challenge and will strive to find and treat the million hidden diabetics. Associations will be assisted by the American Diabetes Association in attaining such objectives as: More graduate courses in diabetes for physicians;

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providing better laboratory services; and helping with instructions for patients. Now is the time for action—will the practicing physicians seize this opportunity for progress in an all-important field or will he prefer to surrender to others his responsibility for diabetes detection and treatment?

COMMITTEE ON DIABETES DETECTION
HOWARD F. ROOT, *Chairman*
81 Bay State Road
Boston, Massachusetts

Warning.

The Federal Security Agency's Food and Drug Administration warns physicians and dentists that certain codes of procaine hydrochloride solution manufactured by C. B. Kendall Company, Indianapolis, Indiana, caused severe necrotic damage upon injection. The facts came to light only recently when the American Medical Association informed the Food and Drug Administration that a physician reported injuries from a batch of the solution coded 24830.

This code was placed in distribution in February 1948. C. B. Kendall Company determined, following reports of untoward reactions, that the solution is highly acid, possessing a pH of about 1. The company attempted to recall the lot by a letter dated June 3, addressed to each purchaser of the vials, which directed their return, and by recall efforts of its own salesmen. This recall program has not been completely effective.

The Food and Drug Administration has just learned that another batch of the firm's procaine hydrochloride solution, coded 64712, has caused several alleged necrotic reactions. The pH of a vial of this lot was found to be 2.9.

Pharmacological work being performed by the Administration indicates that these two products are dangerous and should not be used. They have been distributed in the area from Florida to Wisconsin and from West Virginia to Texas.

The C. B. Kendall Company has distributed several other lots of injection drugs which possess a pH of 3.0 or less. Of these the firm has voluntarily recalled the following products on which complaints have been received:

Vitamin B Complex Stronger—Lot No. 54843

Vitamin B Complex—Lot No. 44832

Pentabexin—Lot Nos. 44823 and 54837

Thiadoxin—Lot Nos. 34808, 44817, and 64842.

Also, the following injection products of C. B. Kendall Company have shown low pH values as indicated:

Product	*Lot Number*	*pH*
Vitamin B Complex Stronger	64844	2.9
Vitamin B Complex	54811	2.8
Thiamine Hydrochloride	34817	2.6
Thiamine Hydrochloride	74806	2.9
Pyridoxine Hydrochloride	74725	2.7
Pentabexin	64812	3.0
Procaine Hydrochloride	74871	3.0

The above facts which have been obtained to date require the issuance of this notice to physicians even though the investigation has not been completed.

The Council on Pharmacy and Chemistry of the American Medical Association is assisting in the distribution of this notice through its facilities for communicating to hospitals and physicians.

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PUBLIC HEALTH

L. J. ROPER, M.D.,
State Health Commissioner of Virginia.

The report of the Bureau of Communicable Diseases of the State Department of Health for September 1948, as compared with the same month in 1947, and for the period of January through September 1948 compared with the same period in 1947, is as follows:

	Sept. 1948	Sept. 1947	Jan.-Sept. 1948	Jan.-Sept. 1947
Typhoid and Paratyphoid	16	27	110	97
Diarrhea and Dysentery	548	641	3,318	4,266
Measles	67	83	6,130	7,522
Scarlet Fever	28	42	639	936
Diphtheria	17	11	160	167
Poliomyelitis	157	55	420	114
Meningitis	6	2	70	83
Undulant Fever	9	11	69	61
Rocky Mountain Spotted Fever	2	8	59	62
Tularemia	4	7	45	46

USE OF GENERAL HOSPITALS FOR COMMUNICABLE DISEASES

It is nearly a year (December 10, 1947) since the State Board of Health adopted the revised recommendations of the American Public Health Association as the official rules and regulations for control of communicable diseases in Virginia. Since the requirements regarding quarantine and the rigidity of isolation changed the prevailing customs of previous years, it is understandable that acceptance of the new concept has been qualified on the part of some physicians and many laymen. This has doubtless been the cause of the objections of certain lay and medical men of general hospital staffs toward accepting communicable diseases in their institutions.

Part of this apprehension regarding the danger of the spread of communicable diseases is removed by an analysis of present knowledge. It is accepted that in most communicable diseases the period of greatest communicability is in the stage before diagnostic signs appear. Even while accepting this fact we still take the precaution of requiring isolation of sick individuals during the active course of their illness.

It is obvious that quarantine of contacts does not limit the spread of communicable disease. If we really believed in the efficiency of the quarantine of all contacts we would quarantine the physician and not permit him to pass from a patient with communicable disease to others. No one advocates such a course. We do expect intelligent, communicable disease minded physicians to observe adequate precautions.

The present attitude toward the handling of communicable diseases is a far cry from the inhuman one of Bible times when the patient with leprosy was compelled to live in desert caves, cry "Unclean" to passers by and be stoned if he ventured to break his isolation.

The following principles regarding the use of general hospitals in the care of communicable diseases are generally accepted:

1. Hospitalization in contagious disease hospitals has not proved an effective method of preventing spread of communicable disease.
2. Cross infection in well supervised hospitals has been reduced to a minimum.
3. The use of sulfonamides, penicillin and streptomycin have resulted in decreased secondary attack rates and infectivity periods.
4. The chief benefit to the patient is the better care he receives in well conducted general hospitals through availability of qualified consultants in fields of medicine and surgery.
5. Experience in the care of communicable diseases is valuable continuous training for physicians and nurses in general hospitals.
6. Contagious disease wards of general hospitals should be properly constructed and in charge of physicians and nurses familiar with proper techniques of isolation and care of patients with communicable diseases.
7. Especially in smaller communities, there is great need for better hospital care for communicable disease cases. This care should be provided through provision of isolation facilities in general hospitals.

It is not contended that all communicable diseases should be hospitalized. Because of more adequate facilities for treatment of the disease, and possible complications, typhoid fever, meningitis, poliomyelitis, pneumonia and tuberculosis do better in hospitals. On the contrary, influenza, measles and whooping cough often may be better cared for in the home unless complications arise.

MEDICAL SOCIETY OF VIRGINIA PUBLIC RELATIONS

HENRY S. JOHNSON, *Director*

A number of State Medical Societies are now publishing News Letters in an effort to keep their members up-to-date on current developments in the socio-economic, and other aspects of medicine. The following are quotes from two of these publications.

A Trojan Horse

The antivivisectionists have used practically every dodge known to the deceiver. The newest is a Trojan horse known as the National Pet Protection Patrol. This is a "nation-wide organization to help boys and girls learn how to care for their own pets and to protect dogs, cats and other animals from all forms of cruelty", according to the Chicago Herald American. This organization is opened at no cost to all children six years of age or over. A chapter organized in September 1947 is said to have acquired 3,800 members in the public schools of Los Angeles in less than one year.

The organization offers the usual bait to children by giving them free an engraved badge and an official membership card, thus creating a nationwide organization of youthful Don Winslows on the prowl against cruelty to animals.

On the surface no sane person with any tenderness in his heart for animals could object to this beautiful and idealistic purpose. Only the cynic who looks beneath the surface would find the occupants of this Trojan horse and recognize them for what they are. James H. Cruikshank, Geo. R. Farnum, Mrs. Eliot Tuckerman, Ernest Weidhaas, and Verna Hayward of Los Angeles, are all prominent in antivivisection movements. This is an insidious example of penetration into public schools by special pleaders. The success of this movement could mean the indoctrination of millions of school children with ideas contrary to the principles of scientific research, particularly in the fields of biology and medicine. Unless school officials are warned, they might see little reason to question the desirability of education stressing kindness to animals. Physicians and medical societies everywhere should call this menace to the attention of the schools. (Council News Letter of the Council on Medical Service and Public Relations, Louisiana State Medical Society, September 20, 1948.)

Three Minute Club

The latest wrinkle in medical public relations comes from Colorado. A "Three Minute Club" has been organized, each physician agreeing to spend three extra minutes with his patients after completing his professional services. *Philadelphia Medicine,* publication of the Philadelphia County Medical Society, endorses the idea, saying: "Patients not only come to us for treatment and advice, but also for words of reassurance concerning their eventual recovery. We cannot show a personal interest in a patient by appearing hurried or anxious to see the next patient. How about starting immediately to give your patients a little more of your time? You will be surprised how much it will mean in your relations with them." (Membership News Letter, the Medical Society of New Jersey, October 1948).

The following excerpts are from *American Medicine* and the *Political Scene,* September 10, 1948, published by Dr. Marjorie Shearon:

President Releases Report on Health Put Out by Ewing, One of His Campaign Managers

When plans for the National Health Assembly were announced last spring by Oscar Ewing, many persons were skeptical about his objectives. The skepticism which we had from the time the NHA, Inc. was announced and which we voiced throughout the meetings of the Assembly in May has been entirely substantiated by the recommendations in the report.

Here is a campaign document printed at the taxpayers' expense. It is entitled: "THE NATION'S HEALTH A TEN YEAR PROGRAM", being a report to the President by Oscar R. Ewing, Federal Security Administrator; copies of the 186-page document may be obtained from the Government Printing Office for $1.

To begin with, it is ludicrous for an out-and-out politician like Ewing to publish a report on the Nation's health. Such a report should emanate from the Surgeon General of the USPHS. Here is a document politically conceived, politically engineered, and politically timed. Can one doubt it is intended to help put Ewing on the map and to pub-

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licize the President's legislative program? Ewing has endeavored to make himself and his top administrative assistants spokesmen in the highly technical fields of health and medicine. Does a report on health require tinkering by professionally unqualified persons?

Onward Towards State Socialism Under the Truman-Ewing Plan!

The essence of the Truman-Ewing health program is, as we predicted it would be, creation of a national compulsory medical care insurance system. This would be augmented by a greatly expanded program of medical education and research, hospital construction, hospital maintenance, and community health protection. Financially, it would mean doubling of present governmental expenditures—Federal, State, and local—for civilian health by 1960 and an annual outlay of upwards of $10 billion for compulsory social security medicine for the entire population. Regardless of the method by which the public funds are to be raised for the program, the fact remains that the cost to the taxpayer would be $15 billion a year or more. Part of this would come from increased social security taxes, but most of it would come from general revenues which would be obtained by increasing income taxes at Federal and State Levels and by taxing anything that would bear a tax at local levels.

Ultimate Abolition of Non-Profit and Commercial Insurance Advocated by Ewing

A number of radical changes are implicit in the Truman-Ewing proposals. Voluntary insurance is to be wiped out eventually. Says Ewing: "The people who need health insurance most will not be able to get it under voluntary plans. I am forced to the conclusion that the voluntary insurance plans can never do the job that the national interest requires to be done."

BOOK ANNOUNCEMENTS

Occupational Therapy Source Book. Edited by Sidney Licht, M.D. With an introduction by C. Charles Burlingame, M.D. Baltimore, The William & Wilkins Company. 1948. vii-90 pages. Cloth. Price $1.00.

Handbook of Orthopaedic Surgery. By ALFRED RIVES SHANDS, JR., B.A., M.D., Medical Director of the Alfred I. DuPont Institute of the Nemours Foundation, Wilmington, Delaware; etc. In Collaboration with Richard Beverly Raney, B.A., M.D., Associate in Orthopaedic Surgery, Duke University School of Medicine, Durham, North Carolina; etc. Illustrated by Jack Bonacker Wilson. Third Edition. St. Louis, The C. V. Mosby Company. 1948. xviii-574 pages. Cloth. Price $6.00.

Correlative Neuroanatomy. By JOSEPH J. McDONALD, M.S., M.Sc.D., M.D.; JOSEPH G. CHUSID, A.B., M.D.; and JACK LANGE, M.S. M.D. Fourth Edition, Revised. 60 Illustrations. University Medical Publishers, Palo Alto, California. 1947. 156 pages. Illustrated. Paper. Price $3.00.

The authors have taken a subject, usually thought to be a difficult one, and written a concise outline that is all inclusive. The title, "Correlative Neuroanatomy", might better be "Correlative Neurology", as it not only includes neuroanatomy, but also some physiology and pathology.

There are three well illustrated sections to this book. The first one takes up the peripheral nerves, including the autonomics. Each main nerve is listed with its anatomy, central connections, symptoms, syndromes and tests. Section two deals with the principles of neurodiagnosis, which includes motion with its gaits, deformities and postures; sensation, reflexes, muscular dystrophies and atrophies, and trophic changes associated with lesions of the nervous system. Section three confines itself to the central nervous system and its diseases, cerebrospinal fluid, and intracranial pneumography. The last ten pages take up neurological signs and syndromes, the principles of a neurological examination; and two figures illustrating the general areas of referred pain in visceral disease.

Essentially this book is not a textbook, but is an excellent up-to-date quick reference for those who have had some neurology.

LOUISE L. JONES

Psychobiology and Psychiatry. A Textbook of Normal and Abnormal Human Behavior. By WENDELL MUNCIE, M.D., Practicing Psychiatrist; Chairman, Medical Advisory Board, Seton Institute, Baltimore, Md.; Associate Professor of Psychiatry, Johns Hopkins University; etc. Second Edition. St. Louis. The C. V. Mosby Company. 1948. 620 pages. With 70 Illustrations. Cloth. Price $9.00.

Several significant changes have been made in this edition as compared with the first edition, which was published in 1939. For example, the historical appendices which contributed a great

deal to the bulk of the first edition, have been deleted. There has been apparently no change in Part I of the book, which discusses the fundamental conceptions of psychobiology and contains the outline of the student's personality study. This section emphasizes the conscious functioning of the individual and dismisses the contributions of the psychoanalysts with very brief comment.

The remainder of the book is devoted to a very detailed description of examination methods and description of the various psychiatric reaction types and their treatment. There are numerous and excellent case histories included as illustrations. Unfortunately, the Meyerian terminology has been retained and it is the opinion of the reviewer that this can serve but to confuse the student who is accustomed to the standard nomenclature.

Part III of the book is the most valuable. It is composed of a discussion of the treatment of the various reaction types, going into great detail about the management of patients with these various disturbances.

It is felt that this text is of definite value as a reference book but it is perhaps too lengthy for use as a standard text for undergraduate students.

P. H. D.

Medical Writing. The Technic and the Art. By MORRIS FISHBEIN, M.D., Editor, **The Journal of the American Medical Association.** With the assistance of Jewel F. Whelan, Assistant to the Editor. Second Edition. Philadelphia, The Blakiston Company, 1948. 36 Illustrations. 292 Pages. Price $4.00.

Each year two to three thousand manuscripts are submitted to the *Journal of the American Medical Association*. Consequently Dr. Fishbein, the editor, writes as an expert when he tells the would-be medical author how to write a medical paper and why he returns 75 per cent of the manuscripts. Every one who writes for medical journals should read this little book. The chapter on Solecisms alone is worth its price. He explains why it is foolish to say a patient has a temperature when one means that the patient has a fever. "To operate a patient" is a mistake that only American Surgeons make. The careless use of *pathology, biopsy,* and *cystoscope* is deplored. No astronomer telescopes the sky. One removes tissue for a biopsy. Pathology is the science of the origin, nature and course of diseases. One frequently hears that the patient's *serology* is negative. The word human is an adjective and therefore has no plural form. It should never be used as a noun except colloquially or in a humorous sense. There are chapters on capitalization, abbreviations, numbers, preparation of manuscripts, illustrations, tables and charts, revision of the manuscript, proofreading, indexing and abbreviations of names of periodicals. The chapter on revision of the manuscript is especially interesting. Sir Clifford Allbutt customarily made four drafts before the manuscript was considered ready for the printer. In this process the resulting paper was reduced 20 to 25 per cent. Sir William Osler made notes on any kind of paper that was handy, when he was gathering material. These he assembled in a long hand draft. The next stage was a typewritten copy with interlineations, transpositions and deletions. Then there was a second typewritten copy which was again greatly modified. Finally there was a third typewritten copy which was sent to the printer. Even this showed minor corrections.

Anatole France held that seven revisions were necessary and an eighth was desirable. If these masters of style found it necessary to take so much pains, the casual writer should be equally painstaking.

M. P. R.

Your Baby. The Complete Baby Book for Mothers and Fathers. By GLADYS DENNY SCHULTZ, Contributing Editor, Ladies' Home Journal and LEE FORREST HILL, M.D., Former President, American Academy of Pediatrics. Photography by Joseph Di Pietro; Line drawings by Reisie Lonette. Doubleday and Company, Garden City, New York. 1948. viii-278 pages. Cloth. Price $3.50.

"This is the *first* book to recognize that babies have two parents—and that Father, too, needs some instruction. Thoroughly readable, complete and easy to understand, 'Your Baby' covers everything from the time pregnancy is first suspected, through birth, infancy, and up to the time the child reaches school age.

"A special feature of the book is the picture section, in which important instructions are illustrated by photographs and drawings. And there's a record section which, when filled in, will make this book a treasured personal history of the baby's early years."

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EDITORIAL

Our New President

THE annual session of the Medical Society of Virginia in Richmond witnessed the installation of Dr. M. Pierce Rucker as President. In selecting Dr. Rucker, the Society has chosen one of the most distinguished physicians of this section and one of its most loyal and useful members.

Dr. Rucker was born January 6, 1881, at Pohick, Fairfax County, Virginia, where his father, Dr. Edwin T. Rucker was in practice. After attending Randolph Macon College, where he received the degree of A.M. in 1899, he studied medicine for one year at the Medical College of Virginia, transferring to Johns Hopkins Medical School from which he was graduated in 1903. Engaging in general practice with his

MARVIN PIERCE RUCKER, M.D.,
President, Medical Society of Virginia

father, then in Richmond, he soon developed special interest in Obstetrics and Gynecology, and since 1915 has confined himself exclusively to that specialty. His teaching began in 1903 at the Medical College of Virginia as demonstrator in Histology and Embryology. Later, he became Associate Professor of Obstetrics, a position he held until his resignation in 1930. In 1940 he served as lecturer on the History of Obstetrics at Duke University. He has been a diplomate of the American Board of Obstetrics since 1930 and for many years has been head of the Department of Obstetrics of the Johnston Willis Hospital.

While conducting a large and exacting practice, Dr. Rucker has taken an active part in the affairs of various professional organizations. He was President of the

American Association of Obstetricians, Gynecologists and Abdominal Surgeons in 1934, and of the South Atlantic Association of Obstetricians and Gynecologists in 1940. He is a member of the American Gynecology Society and an honorary fellow of the Washington Gynecology Society. In 1937 he was president of the Richmond Academy of Medicine. He has also served as Chairman of the Section of Obstetrics and Gynecology of the American Medical Association and of the Section on Obstetrics of the Southern Medical Association.

In December, 1942, Dr. Rucker succeeded Dr. Wyndham Blanton as Editor of the VIRGINIA MEDICAL MONTHLY and the character of that publication testifies to the quality and effectiveness of his work. Floral Eponyms, Dr. Rucker's original and unique contributions, in which physicians for whom flowers have been named are briefly discussed, have attracted nation-wide attention. In addition to his duties as editor, he has rendered valuable service in establishing the society sponsored plans for pre-paid hospital and medical care in the state.

Dr. Rucker has also assumed responsibilities and attained honors outside of medicine. He has served as Chairman of the Board of Stewards of Centenary Methodist Church and is a Trustee of Randolph Macon College. He is an honorary member of Phi Beta Kappa and was President of the Richmond Alumni Chapter of Phi Beta Kappa in 1943. In 1938 Randolph Macon College awarded him the honorary degree of LL.D.

As practitioner, teacher and writer, Dr. Rucker exemplifies the scholarly physician. Yet his has not been the cloistered life, for through his activities in various organizations he has kept in constant touch with the trends and problems that concern the medical profession. This experience, together with a capacity for sound judgment and clear expression, fits him in unusual degree for the duties and responsibilities of the high office to which he has been chosen.

J. M. H.

Civilian Vocational Rehabilitation

IN this year of our Lord, 1948, to mention a cripple calls to mind a veteran. Yet civilian life has as many and as serious casualties: amputees, paralytics, the deaf, the blind, cardiacs, etc. Every phase of life adds its quota. Our ancestors contribute poor genes. Parturition has its victims of anoxia and trauma, although fortunately these are becoming less common. Accidents on the playground, on the farm, in the factory, as well as those of the automobile contribute consistently. Others are due to diseases: osteomyelitis, diseases of the central nervous system, lungs and heart. Altogether, there are in Virginia, it is estimated, some twenty to twenty-five thousand persons with physical impairments so severe as to interfere with their making a living.

The State Board of Education has undertaken something that no other state is doing. At the end of the war the 1900 bed Woodrow Wilson General Hospital was a white elephant. It was badly situated for civilian hospital needs. The Veterans Administration wanted its hospitals near teaching centers. The Federal Government finally deeded a portion of it to the State Board of Education to be used as a vocational rehabilitation center and a portion of it to the Augusta County School Board for a high school and a regional vocational school. This high school now has an enrollment of about 1,000 and the vocational school has an enrollment of about 200. Here are dormitories, conference rooms, and facilities for all sorts of hydrotherapy and physiotherapy, craft shops of all kinds— radio, watch making, wood work, shoe repairing, repair weaving, zipper repairing, print shop, book binding, and a department of cosmetology. Colonel W. Kuhn Barnett is in charge and has gathered to-

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gether a competent staff of forty. We asked Colonel Barnett what he called his clients —inmates, boarders, pupils, or patients and he said they preferred to call them scholars. Although we saw no books we were willing to accept Colonel Barnett's nomenclature. He is starting a new kind of institute and it is right that he should have the privilege of making a new terminology. At present there are over 80 scholars. They appear happy and busy about some useful task. We met one quadriplegic, the victim of an automobile accident. She is regaining the use of her shoulder muscles and is as happy as can be.

The average duration of training is approximately six months. The scholars come from all over the state and are selected by nineteen district supervisors of vocational rehabilitation who interview the applicants in their homes and send in a detailed report as to the physical and mental condition of the applicant and his background. Usually he must be able to take care of his physical needs. We noticed over some of the bath tubs there were "Jacob's ladders". Colonel Barnett told us that many of the scholars had never used a bath tub before coming to him. The scholars and the staff are living together like a big happy tribal family except that a tribe does not have a bath tub for every two persons.

The Institution has buildings and equipment for almost unlimited expansion. We imagine that getting personnel is the greatest check to rapid growth. Gathering a large staff must be a slow process. Although the need is great, we hope it will not expand so rapidly as to endanger its present *esprit de corps*. To walk over the place with Colonel Barnett is a great privilege and a revelation.

New Lows in Maternal and Infant Mortality

THE figures recently released by the State Health Department for 1947 show new low rates for both maternal and infant mortality. There were 1.7 maternal deaths per 1000 live births and an infant death rate of 37. This is an excellent illustration of what cooperation can do. The Medical Society of Virginia has long had an active Committee on Maternal Health. It is composed of representative obstetricians and general practitioners from various parts of the state. In addition, Dr. A. L. Carson and Dr. L. L. Shamburger from the State Health Department are members of the Committee. One of the objects of the Committee was to see that adequate prenatal care was available to every prospective mother. At present there are 99 maternal clinics. Two hundred and fifty-six local physicians serve the prenatal and well baby clinics. In the year July 1, 1946 to June 30, 1947, 7,291 prenatal patients were admitted to the clinics and 9,722 well baby patients. The prenatal patients paid 31,618 visits and the well babies 29,167. Even now there are a few counties without this health service. The establishment of these clinics created increased interest in obstetrics both by the laity and the profession. The next step was a review of each maternal death by the Committee. The data were gathered by Dr. Carson or by Dr. Shamburger. Names and localities were omitted so that the other members of the Committee did not know whose cases were being reported. The cases were classified as preventable or non-preventable and if preventable, whether error of technic or judgment was that of the attendant or of the patient and if there were any lack of facilities. During World War II the review of the maternal deaths was discontinued for lack of personnel. It has now been resumed in a modified form. The information is obtained by questionnaires. So well did Drs. Carson and Shamburger lay the foundation with their personal visits that the response to the questionnaires has been very gratifying.

The third factor in the lowering of maternal mortality was the providing of hospital care for indigent mothers and babies when such care seemed to be indicated. This was a natural result of the establishment of prenatal clinics and in the increased interest in obstetrics, and yet so far as we know no other State has such a program. In the year July 1, 1946-June 30, 1947, 920 obstetrical patients and 446 pediatric patients were hospitalized under this plan.

In round numbers one-half of the infants who die in the first year die in the first month. One half of those who die in the first month, die in the first week and one half of those who die in the first week die in the first 24 hours. Prematurity ranks eighth in all the causes of death. Improvement in obstetric care should reflect in infant mortality and such is undoubtedly the case. In addition the pediatricians are interested. They are approaching the problem somewhat differently from the obstetricians. They have just completed a state-wide survey of pediatric facilities under the auspices of the American Academy of Pediatrics.

A New Approach to the Pelvic Cancer Problem

THE treatment of cervix cancer whether by radiation or by surgery has reached a plateau. A 35 per cent five year cure rate is about as much as one can expect under present conditions. A similar state of affairs in regard to maternal mortality existed a number of years ago. Committees were established in New York and Philadelphia whose function was to study each maternal death and discuss the pertinent facts with the doctors concerned. This proved to be salutary and the example of New York and Philadelphia was followed in other parts of the country. This proved to be a very important factor in the tremendous reduction in maternal mortality that has taken place all over the country.

The Philadelphia County Medical Society has appointed a similar Committee for the study of pelvic cancer. It has been in operation for several years. At its meetings pelvic cancer cases are discussed in a manner similar to the discussion of maternal deaths by the Maternal Welfare Committees. The findings of this Committee are that in a great majority of the cervix cancer cases, over 80 per cent, there has been an inexcusable delay in seeking a diagnosis both on the part of the patient and by the physician. There is an aversion on the part of the patient to a vaginal examination and an even greater aversion on the part of the general practitioner. One member of the Committee explains the attitude of the doctor by describing what takes place in the medical school and hospital. We teach the medical students the importance of pelvic examination in diagnosis. They are impressed with this fact in their gynecological training. When they become "residents in internal medicine," what happens? They make a physical examination down to the pelvis. A consultation slip is sent to the gynecologist to see the patient and make the examination. That normally means that men leave the hospital with the feeling that a pelvic examination is not quite the part of a general physical examination. The Committee cites the case of a 70 year old widow who in the period of one year was treated by four different physicians for an intractable backache. None made a pelvic examination. When after a year's treatment a vaginal examination was made, a grade III cancer of the cervix was found.

It is too soon to know if this new approach to the cervix cancer problem will yield practical results, but the history of the Maternal Welfare Committees' investigation leads us to hope that it will.

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SOCIETIES

Southwestern Virginia Medical Society.

The meeting of this Society at Maple Shade Inn, Pulaski, on October 7th, was well attended, there being 60 at the afternoon session, and 82 in addition to guests at the banquet that evening. Dr. Douglas D. Vance of Bristol presided. The afternoon program by members was as follows:

"Anesthesia and its Relationship to Surgery"
DR. A. D. HUTTON, Marion

"Primary Splenic Panhematocytopenia—with Presentation of Case"
DR. JAMES MARTIN, Pulaski

"Treatment of Common Type Fractures About the Joints"
DR. PHILLIP TROUT, Roanoke

"Rickettsial Disease Problems in Southwest Virginia"
DR. VERNON A. TURNER, Abingdon

This was followed by a business session and a social hour before the banquet. The evening session was given over to the guests who presented the following papers:

"Acute Head Injuries—Treatment and Management."
DR. EDGAR WEAVER
University of Virginia
Charlottesville

"Relation of Chronic Cystic Mastitis to Carcinoma of the Breast"
DR. HARRY A. OBERHELMAN, Loyola University and Attending Surgeon Cook County Hospital, Chicago

REMARKS
DR. D. D. VANCE, Out-going President
Bristol, Virginia-Tennessee

At the business session, the following officers were elected for the coming year: President, Dr. R. M. DeHart, Radford; vice-president, Dr. George C. Williams, Pearisburg; and Dr. Andrew F. Giesen of Radford was re-elected secretary-treasurer. Dr. Cecil Hickham of Pulaski was elected to the Executive Committee for a term of three years, and the following were named for the Public Relations Committee, with Dr. Andrew Giesen as general chairman: Dr. W. A. Porter for Carroll County; Dr. S. A. Tuck for Giles; Dr. James P. King for Montgomery; Dr. Cecil Hickham for Pulaski; Dr. E. V. Richardson for Smyth; Dr. Charles Harkrader for Washington; Dr. Julian Manges for Wythe; Dr. V. J. Cox for Grayson; and Dr. George Kegley for Bland.

The next meeting will be held in the Spring.

Halifax County Medical Society.

At the meeting of this society on September 22, Dr. William C. Brann of South Boston, who had served for a number of years as secretary-treasurer, was elected as president for the coming year. Those to serve with him are Dr. C. B. White of Halifax as vice-president and Dr. Nat H. Wooding of Halifax as secretary-treasurer.

Roanoke Academy of Medicine.

At the regular meeting of the Academy on October 4th, the following officers were installed: President, Dr. Charles H. Peterson; vice-presidents, Drs. Frank J. Helvestine and John E. Gardner; and secretary-treasurer, Dr. T. J. Humphries. Members of the Executive Committee are Drs. Charles A. Young, Sr., Charles M. Irvin, C. D. Nofsinger, E. G. Gill, and H. H. Trout, Jr.

The Lynchburg Academy of Medicine

Met on October 4th with Dr. E. S. Groseclose, vice-president, presiding. Dr. Byrd Leavell, assistant professor of medicine of the University of Virginia Medical School, presented an interesting and informative paper, well illustrated with lantern slides, on "Some Problems Associated with Splenomegaly".

Williamsburg-James City Medical Society.

Present officers of this society are: President, Dr. Frank A. Dick; vice-president, Dr. J. E. Barrett; and secretary-treasurer, Dr. E. Beamer Maxwell.

Richmond Academy of General Practitioners.

The Richmond (Va.) branch of the American Academy of General Practitioners has elected the following officers: President, Dr. E. E. Haddock; vice-president, Dr. Carl Lingamfelter; treasurer, Dr. Reuben F. Simms; secretary, Dr. William R. Morton. The Board of Directors includes Dr. H. W. Decker, Dr. Gordon D. Hall, Dr. R. G. McAllister, and Dr. Fleming Gill. There are 136 eligible doctors in the Richmond area and it is

the aim of the association to enroll as many of these as possible.

At its meeting in September, the Academy went on record as opposing a site too near the Medical College of Virginia Hospital for the new hospital to be established in Richmond, suggesting that it be located in the west end of the city. This recommendation is to be passed on to the local society.

The Neuropsychiatric Society of Virginia

Met for its regular Fall session at the Veterans' Administration Hospital, Roanoke, on October 6. Speakers were Dr. Richard S. Lyman, Duke University, Durham, N. C., Dr. Edward P. Greenwood, The Southard School, Topeka, Kansas, and Dr. Harvey J. Tompkins, Veterans' Administration, Washington, D. C. The staff of the hospital were hosts at a barbecue supper following the meeting. Officers of the Society for the current year are Dr. Claude L. Neale, Richmond, president; Dr. James B. Pettis, Staunton, vice-president; and Dr. James K. Morrow, Radford, secretary-treasurer.

The Virginia Peninsula Academy of Medicine

Held its first fall meeting on September 20th in Newport News, under the presidency of Dr. George G. Hankins. Sixty-seven physicians were present, including visiting obstetricians from Norfolk and Richmond. Dr. Charles O. McCormick, Professor of Obstetrics, University of Indiana, was guest speaker, his subject being Rectal Analgesia in Obstetrics. Dr. William A. Read of Newport News is secretary.

NEWS

Second Annual Interim Session.

Attention of the medical profession will be focused on procedures and problems of the family doctor, or general practitioner, at the second annual Interim Session of the American Medical Association in St. Louis, November 30 to December 3, 1948.

On the eve of the Interim Session, Saturday, November 27, the first national Medical Public Relations Conference will be held under sponsorship of the A. M. A. at the Statler Hotel in St. Louis.

Lecture meetings and a wide variety of clinical conferences on conditions most often seen in daily practice will be conducted at the Interim Session by medical leaders from all sections of the nation.

Subjects to be discussed include diabetes, heart disease, cancer, poliomyelitis, obstetrics, pediatrics, dermatology, genito-urinary conditions, hypertension, anesthesia, tuberculosis, jaundice, laboratory diagnosis, x-ray diagnosis, and physical medicine as applied to the treatment of arthritis.

Diagnosis and treatment will be stressed in the clinical conferences, which will be correlated with the lecture meetings.

Evening programs will feature distinguished speakers and the award of the general practitioner medal.

A scientific exhibit with nearly 100 displays will show clinical and pathological material, and approximately 115 leading manufacturers will display technical exhibits of new medical products, equipment, and publications. All exhibits will be open from Tuesday at 8:30 a.m. to Friday noon, November 30 to December 3.

Papers will be read at the General Scientific Meetings in the St. Louis Opera House from 9 to 10 a.m. and from 2 to 3 p.m. each day.

Dr. Jordan to Retire.

Dr. H. E. Jordan will retire February 1 as dean of the Department of Medicine of the University of Virginia, a position he has held for a number of years. He will be succeeded by Dr. Vernon Lippard, dean of the Louisiana State University School of Medicine. Dr. Lippard is a graduate of the Yale School of Medicine in 1929 and, before going to Louisiana, he was associate dean of the College of Physicians and Surgeons of Columbia University in New York City.

Medical College of Virginia News.

Dr. Everett I. Evans, Professor of Surgery and Director of the Surgical Research Laboratory, was recently awarded a certificate of appreciation for his research on surgical shock during World War II. The award was made jointly by the Navy and Army. Dr. Evans is the only Richmonder and the sixth Virginian to be so honored for scientific research during the war.

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Dr. W. T. Sanger, President, has announced the formation of a committee to study methods whereby the college might aid in the supply of physicians in the rural areas and smaller communities in Virginia.

The committee was authorized by the Board of Visitors of the college with Dr. Sanger as chairman with two members to be named by him from the faculty of the college and two to be named by the president of the Alumni Association.

Dr. Sanger said he had appointed to the committee Dr. A. B. Gathright, Jr., and Dr. Charles M. Caravati. Dr. Robert J. Wilkinson, Alumni Association president, has named Dr. Ray A. Moore of Farmville and Dr. C. W. Haden of Evington, as representatives of the Alumni Association. The committee will endeavor to make specific recommendations as to how the number of physicians in rural areas may be increased and how physicians may be attracted to smaller communities where there is a shortage at the present time.

A total of 1,119 students of whom 417 are freshmen are enrolled in the 112th session which began in September.

The School of Medicine for the current session has an enrollment of 326 of whom 84 are freshmen. In the new class of medical students, there are 71 from Virginia, 5 from North Carolina, 3 from West Virginia, and 5 others from Puerto Rico, Kentucky, Florida, and Maryland.

The Schools of Dentistry and Pharmacy at the college have the largest enrollments in their history. There are 174 students in dentistry with 50 freshmen and 214 in pharmacy with 59 freshmen. Of the 310 women in the School of Nursing, 96 are freshmen. There are also 45 students enrolled in physical medicine at the college, nine dietetic interns, 14 studying medical technology, and 25 enrolled in X-ray technology.

Winchester Memorial Hospital Staff Conferences.

At the regular staff meeting on September 21st, Dr. Paul D. White, Boston, was invited guest, his subject being "Coronary Heart Disease and Angina Pectoris". There were about seventy-five physicians from Winchester and surrounding territory in attendance.

At the meeting on October 27th, there was a symposium on hypertension as follows: Etiology by Dr. John C. Hortenstine; Fundus Changes by Dr. William P. McGuire; Medical Treatment by Dr. E. W. Lacy, Jr.; and Surgical Treatment by Dr. M. D. Custer, Jr.

Dr. Charles Briel Keppler,

Formerly of Norfolk, is now associated with the Emerald-Hodgson Hospital, Sewanee, Tennessee, in the department of internal medicine. He is a graduate of the Medical College of Virginia, class of 1941.

Dr. James L. Chitwood

Announces his association with the Pulaski Hospital, Pulaski, in the practice of internal medicine. He is a graduate of the Medical College of Virginia in 1943 and has recently been with the Veterans Administration in Richmond.

The Thomas Clinic

Was opened on September 1st at 2031 Monument Avenue, Richmond. Drs. J. Warrick Thomas and Joseph M. Hester, the staff members, will limit their practice to allergy and internal medicine.

Dr. J. A. M. Thompson,

Recently of Stevensburg, is now with the Veterans Administration Hospital, Swannanoa Division, Oteen, North Carolina.

Dr. Roy B. Sampson, Jr.,

Recently of Roanoke, is now located at Purcellville.

Dr. W. H. (Joe) Springall,

Recently of Gloucester Court House, on September 1st became part owner of the Fredericksburg Hospital and Clinic at Fredericksburg, Texas, where he is now located. He is head of the obstetrical and medical departments of the clinic.

Married.

Dr. Samuel Walthall Budd, Jr., Richmond, and Miss Emilie Grace Mueller, Baltimore, Maryland, September 18.

The Country Doctor.

A number of states are trying to solve the rural-doctor shortage through scholarship loans to finance the medical education of local boys who will promise to spend a specified number of years in rural practice in these states, Steven M. Spencer says in an interesting article in the October 9 issue of the *Saturday Evening Post*.

XUM

Kentucky and Illinois have such funds and Indiana, Mississippi, North Carolina and Virginia have plans for them.

Mr. Spencer, associate editor of the *Post* who won the George Westinghouse Science Writing Award in 1947, describes the career of Dr. Chester U. Callan, of Rotan, Texas, who built his own hospital and maintains it with the help of two partners, Doctors Robert T. Wilkinson and J. Frank Johnson

"Not enough young men share Doctor Callan's taste for rural practice," Mr. Spencer says in explaining the shortage of country doctors. "To most of them the comfortable roominess and friendliness of the farm and small town can't match the dollar appeal and the alleged cultural advantages of the crowded cities. . . . As a result of this, many a village doc is growing old and tired, with no one coming down the pike to whom he can sell his practice."

The Callan hospital and others like it have proved that such institutions boost the level of rural health, according to the *Post* article.

Dr. George R. Minor,

Class of '40, University of Virginia School of Medicine, has been appointed an assistant professor of surgery at the University of Illinois College of Medicine. He has served on the staff of the University of Michigan as an instructor in thoracic and general surgery since 1945.

Dr. Harold I. Nemuth

Has been selected by Richmond Police Department employees as the Department physician, succeeding Dr. O. C. Brunk who died recently. Dr. Nemuth is a graduate of the Medical College of Virginia and served with the Navy for four years before entering private practice in Richmond.

Wanted

Physician for industrial practice. For particulars, write Medical Director, Clinchfield Coal Corporation, Dante, Virginia. (*Adv.*)

Wanted

Assistant to doctor in small industrial town in Southwestern Virginia. Contract and private practice. Will pay salary and commission, with prospect of taking over entire practice in future. Address "Practice", care this journal, 1200 East Clay Street, Richmond 19. (*Adv.*)

For Rent

Desirable office, centrally located in Richmond. Reasonable. If interested, dial 5-3267, or address "Office", care this journal, 1200 East Clay Street, Richmond. (*Adv.*)

OBITUARIES

Dr. Thomas Erle Rucker,

Well known Lynchburg physician died on September 4, after a prolonged illness which forced him to retire from practice in 1945.

He was born in Amherst County on December 3, 1880, attended Lynchburg schools and later the Medical College of Virginia, graduating in 1902. He practiced in the West Virginia coal fields, Roanoke, and from 1915 on in Lynchburg, being associated for many years with his uncle Dr. R. M. Taliaferro. After practicing one and a half years in West Virginia he studied at the University of Vienna in Austria. Since 1933, and following a course of study at Johns Hopkins University, he specialized in Gastroenterology.

He was a veteran of World War I having served as Chief Medical Officer at the debarkation hospital at Long Island, New York. He and Mrs. Rucker established the Rucker Cup award given annually to the outstanding athlete at the E. C. Glass High School in memory of their son, T. E. Rucker, Jr., who died while a student there. He is survived by his wife and one daughter.

WHEREAS a wise Providence has seen fit to remove from our midst our respected and loyal colleague, Dr. Thomas Erle Rucker, who for many years has been an outstanding Lynchburg physician practicing his chosen profession tirelessly, charitably and diligently,

NOW THEREFORE BE IT RESOLVED that we the members of the Lynchburg Academy of Medicine regret the death of our friend and associate whose fortitude and courage during his last illness was an inspiration to those who knew him best

That in his death the medical profession of our community and state has sustained a great loss

That we extend our heartfelt sympathy to his family in their bereavement, and

That a copy of these resolutions be placed on the min-

utes of the Lynchburg Academy of Medicine, Inc., a copy be sent to Dr. Rucker's family and to the VIRGINIA MEDICAL MONTHLY.

ERNEST G. SCOTT
JAMES R. GORMAN

Dr. Thomas Hambden Massey,

Prominent physician of Smithfield, died September 18th after a long illness. He was a native of Maryland and sixty-four years of age. Dr. Massey received his medical degree from the University of Virginia in 1907 and, after serving overseas during World War I, located at Smithfield where he practiced for twenty-nine years. He was well-known for his generosity and civic spirit and was a former member of the Ruritan and Rotary Clubs. Dr. Massey had been a member of the Medical Society of Virginia for thirty-one years. His wife survives him.

Dr. Fernando A. Ward,

Well known specialist of Suffolk, died October 9, after a long illness. He was seventy-three years of age and a graduate in medicine from the Medical College of Virginia in 1899. He started practicing at Hertford, N. C. and moved to Suffolk in 1921, continuing practice there until last year when forced to retire because of his health. Dr. Ward was a member of the Medical Society of Virginia, the Virginia Society of Ophthalmology and Otolaryngology, and several other medical organizations, besides being active in civic and fraternal organizations. His second wife and a daughter survive him.

Dr. William T. Chitwood,

For thirty-two years a prominent physician of Franklin County, died at his home in Rocky Mount, November 2, 1947. He was born in Rocky Mount, December 28, 1869, and studied medicine at the former University College of Medicine, Richmond, from which he graduated in 1897. Dr. Chitwood was a local surgeon for the Norfolk and Western railroad, physician to the county jail, member of the town and county boards of health and of the town council. He was also a member of the American Medical Association, the Medical Society of Virginia, and the Roanoke Academy of Medicine. He is survived by his wife, a daughter and two brothers.

Dr. J. Sinkler Irvine.

The Lynchburg Academy of Medicine, Incorporated, of which Dr. J. Sinkler Irvine was a popular and honored member, wishes to place on record this memorial as an expression of esteem and a tribute of respect to his memory:

WHEREAS, Dr. Irvine who has been a beloved colaborer in the science of healing in Bedford and Campbell Counties, as well as the City of Lynchburg where he first started practicing in 1893, and later moved to Evington in 1894, and whereas our association, both professional and social, has been close and harmonious, we, the members of The Lynchburg Academy of Medicine recognize the high order of his services and the fineness of his character offer the following resolutions.

BE IT HEREWITH RESOLVED, that in his death on May 30, 1948, Evington and a wide territory in the surrounding counties has suffered a serious loss. A general practitioner of the highest order, whose accomplishments were many and great. One truly a family physician whose skill and ability were unquestioned and who, during the many years of active service to his patients, gave unstintingly of his time to rich and poor alike. No distance too great, no night too dark or stormy to stay his effort. He walked many miles through mud and rain after going as far as possible in his buggy, or on horseback before the days of motor transportation.

The qualities of heart, firmness of purpose, beauty of soul and the other attributes of a Christian gentleman endeared him to those who knew him, the better knowledge bringing the deeper love and appreciation.

That a copy of these resolutions be spread on the minutes of this meeting. That a copy be sent to his family and to the VIRGINIA MEDICAL MONTHLY.

JAMES R. GORMAN
ERNEST G. SCOTT

Dr. Samuel Lewis Steer,

Leesburg, died March 30, having been in ill health for several years. He was seventy-two years of age and received his medical degree from the University of Pennsylvania in 1898. Dr. Steer had been a member of the Medical Society of Virginia for twenty-seven years.

Miss Josephine McLeod.

We regret to announce the death of Miss McLeod on October 4, after an illness of several weeks. She had served most efficiently since 1937 as executive secretary of the State Board of Nurse Examiners.